STRUCTURAL NOTES, SPECIFICATIONS AND GENERAL REQUIREMENTS

DESIGN CRITERIA

D-1 CODES: - FLORIDA BUILDING CODE 7th EDITION 2020
- ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES"

D-2 DESIGN LIVE LOADS:
ROOF 20 PSF
CONCRETE 150 PCF
DESIGN DEAD LOADS:
ROOF 30 PSF

D-3 DESIGN WIND SPEED: Vult = 150 MPH (3 SECOND GUST) PER FIGURE 1609B
Vasd = 116 MPH PER SECTION 1609.3.1
RISK CATEGORY II (PER TABLE 1604.5)
SURFACE ROUGHNESS: C PER SECTION 1609.4
WIND EXPOSURE CATEGORY: C PER SECTION 1609.4
MEAN ROOF HEIGHT: 30 FT
ENCLOSED BUILDING INTERNAL PRESSURE COEFFICIENT
GCpi = +/- 0.18

ASSUMPTIONS:
A. BUILDING IS ASSUMED TO BE ENCLOSED AS DEFINED BY SECTION 1609.2 FBC

THE BUILDING SATISFIES THE REQUIREMENTS OF SECTION 1609.6 "ALTERNATE ALL-HEIGHTS METHOD" AND ALL STRUCTURAL MEMBERS, CLADDING, FASTENERS, AND SYSTEMS PROVIDING THE STRUCTURAL INTEGRITY OF THE BUILDING HAVE BEEN DESIGNED FOR LOADS FROM TABLES LISTED IN ASCE 7-16 CHAPTER 27 - DIRECTIONAL PROCEDURE OF ASCE 7.

C. ALL COMPONENTS AND CLADDING SUBJECT TO WIND LOADINGS, I.E. DOORS, WINDOWS, JAMBS, ROOFING, ETC, SHALL BE DESIGNED AND FASTENED TO RESIST DESIGN WIND PRESSURES FOR COMPONENTS AND CLADDING, AS SHOWN ON PLAN.

D. ALL PRE-MANUFACTURED MAIN WIND FORCE RESISTING COMPONENTS, I.E. TRUSSES SHALL BE DESIGNED TO RESIST MAIN WIND FORCE RESISTING DESIGN FORCES, AS SPECIFIED ON PLAN AND SHALL BE IN AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

E. ALL GLAZING IS HAVE EITHER IMPACT RESISTANT GLAZING OR BE PROTECTED WITH AN IMPACT RESISTANT COVERING.
1. GLAZED OPENINGS LOCATED WITHIN 30 FT OF GRADE SHALL MEET THE REQUIREMENTS OF THE LARGE MISSILE TEST OF ASTM E 1996.
2. GLAZED OPENINGS LOCATED MORE THAN 30 FT ABOVE GRADE SHALL MEET THE REQUIREMENTS OF THE SMALL IMPACT TEST ASTM E 1996.

F. OWNER OR CONTRACTOR SHALL OBTAIN NECESSARY INSTALLATION SPECIFICATIONS AND INSPECTIONS REQUIRED TO COMPLY WITH MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION OF COMPONENTS AND CLADDING FOR HURRICANE PRONE REGIONS.

D-4 SEISMIC: ZONE 0

D-5 ASSUMED ALLOWABLE BEARING CAPACITY OF 2000 PSF. IF SITE CONDITIONS DO NOT ALLOW FOR ASSUMED ALLOWABLE BEARING CAPACITY CONTACT ENGINEER.

GENERAL NOTES

G-1 REVIEW ALL PROJECT DOCUMENTS PRIOR TO FABRICATION AND START OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO ARCHITECT OR STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH WORK.

G-2 THE MASONRY WALLS ARE NOT DESIGNED TO WITHSTAND TEMPORARY CONSTRUCTION LOADS. IT IS THE CONTRACTOR'S RESPONSIBILITY AT ALL TIMES TO MAINTAIN WALL STABILITY DURING THE CONSTRUCTION PHASE OF THIS PROJECT.

G-3 IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE DURING CONSTRUCTION.

G-4 NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE REDUCED IN SIZE OR STRENGTH WITHOUT PRIOR APPROVAL IN WRITING FROM THE STRUCTURAL ENGINEER.

G-5 COORDINATE STRUCTURAL AND OTHER DRAWINGS THAT ARE PART OF THE CONTRACT DOCUMENTS FOR ANCHORED, EMBEDDED OR SUPPORTED ITEMS WHICH MAY AFFECT THE STRUCTURAL DRAWINGS (I.E. MECHANICAL, ELECTRICAL, PLUMBING, DUCTWORK, ETC.)

G-6 ALL DETAILS AND SECTIONS ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT EXCEPT WHERE A SEPARATE DETAIL IS SHOWN.

G-7 THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO PROVIDE ALL NECESSARY DETAILS TO CONSTRUCT A COMPLETE STRUCTURE. WHEN SPECIFIC INFORMATION IS MISSING OR IS IN CONFLICT. THE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER.

G-8 THE ENGINEER SHALL NOT BE RESPONSIBLE FOR LAYOUT, DIMENSIONAL ERRORS OR DISCREPANCIES RESULTING FROM THE REPRODUCTION AND USE OF CONTRACT DRAWINGS FOR ERECTION AND SHOP DRAWINGS. USE OF CONTRACT DRAWINGS REPRODUCED IN WHOLE OR ANY PART IN SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR NOR SUBCONTRACTORS FROM THEIR RESPONSIBILITY TO ACCURATELY LAYOUT, COORDINATE, DETAIL, FABRICATE AND INSTALL A COMPLETE STRUCTURE.

G-9 REVIEW ALL SHOP DRAWINGS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND FOR COMPLETENESS AND ANSWER ALL CONTRACTOR RELATED QUESTIONS. STAMP AND INITIAL ALL SHEETS PRIOR TO SUBMITTING SHOP DRAWINGS TO ARCHITECT/ENGINEER FOR REVIEW. NON-COMPLIANCE WITH THIS REQUIREMENT WILL RESULT IN REJECTION OF SUBMITTAL.

G-10 PRIOR TO ANY WORK, CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS TO VERIFY THE WORK CAN BE DONE AS INTENDED BY THESE DRAWINGS TO PRODUCE A FIRST CLASS PIECE OF WORK. CONTRACTOR SHALL CUT OPEN WALLS AND CEILINGS AS DEEMED NECESSARY TO VERIFY STRUCTURE IS AS ASSUMED BY THESE DRAWINGS. CONTACT M.K. STRUCTURAL WITH ANY DISCREPANCIES OF DRAWINGS OR ASSUMED CONDITIONS PRIOR TO ANY WORK.

SHALLOW FOUNDATIONS

SF-1 SOIL TO BE STRIPPED, COMPACTED AND TESTED IN ACCORDANCE WITHTHE RECOMMENDATIONS OF THE SOILS ENGINEER AND PROJECT SPECIFICATIONS.

SF-2 CENTER ALL FOOTINGS UNDER THEIR RESPECTIVE COLUMNS OR WALLS UNLESS OTHERWISE SHOWN ON PLANS. MAXIMUM MISPLACEMENT OR ECCENTRICITY - 2". TOLERANCE FOR MISLOCATION OF COLUMN DOWELS OR ANCHOR BOLTS TO BE PER ACI OR AISC STANDARDS.

SF-3 HORIZONTAL JOINTS IN FOOTINGS WILL NOT BE PERMITTED.

SF-4 COORDINATE PLUMBING LINES WITH FOOTING LOCATIONS FOR INTERFERENCE. INDIVIDUAL FOOTINGS CAN BE LOWERED WITH THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER. CONTINUOUS WALL FOOTINGS SHOULD BE STEPPED AS DETAILED ON THE DRAWINGS.

SF-5 EXCAVATING UNDER OR NEAR IN-PLACE FOOTINGS/FOUNDATIONS WHICH DISTURBS THE COMPACTED SOIL BENEATH THE FOOTINGS/FOUNDATIONS WILL NOT BE PERMITTED.

SF-6 REINFORCING SHALL BE SUPPORTED ON PRECUTS CONCRETE PADS. DOWELS FOR COLUMNS AND FILLED CELLS SHALL BE SECURED IN PLACE PRIOR TO POURING CONCRETE. USE TEMPLATES FOR SETTING COLUMN DOWELS AND ANCHOR BOLTS.

DRILL-IN BOLTS, HEADED STUDS, SCREWS AND DOWELS

DI-1 WEDGE BOLTS SHALL BE ITW RAMSET/REDHEAD BOLTS OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT CUT EXISTING REINFORCING TO INSTALL.

DI-2 MASONRY AND CONCRETE SCREWS SHALL BE MANUFACTURED BY RAMSET/REDHEAD "TAPCONS" OR APPROVED EQUAL INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

DI-3 ANCHORING ADHESIVE SHALL BE A TWO-COMPONENT SOLID EPOXY-BASED DISPENSED THROUGH A STATIC-MIXING NOZZLE SUPPLIED BY THE MANUFACTURER. SYSTEM SUPPLIED IN MANUFACTURER'S STANDARD SIDE-BY-SIDE CARTRIDGE AND EPOXY SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM C-881 SPECIFICATION FOR TYPE I, II, IV AND V, GRADE 3, CLASS B AND C AND MUST DEVELOP A MINIMUM 10,560 PSI COMPRESSIVE YIELD STRENGTH AFTER 7-DAY CURE.

DI-4 GROUTED ANCHORS SHALL BE SIMPSON EPOXY-TIE ADHESIVE SYSTEM OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.

DI-5 DRILL-IN REBAR DOWELS AND THREADED ROD ANCHORS (A307) SHALL BE SET USING A TWO-PART EPOXY AS DESCRIBED ABOVE.

DI-6 HEADED STUDS (H.S.) SHALL BE "NELSON" OR APPROVED EQUAL. INSTALL USING MANUFACTURER'S SPECIFICATIONS AND IN ACCORDANCE WITH AWS D1.1. ATTACHMENT OF STUDS SHALL BE SUFFICIENT TO DEVELOP THE FULL CAPACITY OF EACH INDIVIDUAL STUD (PER AWS D1.1).

DI-7 EXPANSION ANCHORS MAY BE SUBSTITUTED FOR ANCHOR BOLTS ONLY WITH THE APPROVAL OF THE ENGINEER OF RECORD IN WRITING. EXPANSION ANCHORS USED SHALL BE HILTI, SIMPSON, RAWL, OR APPROVED EQUAL.

STEEL JOISTS

SJ-1 WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR OPEN-WEB STEEL JOISTS AND LONG SPAN STEEL JOINTS, OF THE STEEL JOIST INSTITUTE, LATEST REVISION.

SJ-2 HANGERS FOR SUPPORT OF EQUIPMENT, OR MEMBERS SUPPORTING SUCH HANGERS, SHALL BE LOCATED AT PANEL POINTS OF JOISTS.

SJ-3 JOISTS SHALL BE DESIGNED TO SUPPORT THE LOADS LISTED, THOSE INDICATED ON PLANS AND AN ADDITIONAL CONCENTRATED DEAD LOAD NOT TO EXCEED 500# TO BE PLACED AT ANY PANEL POINT ALONG THE LENGTH OF THE JOIST. DEAD LOADS SHALL BE IN ACCORDANCE WITH THE MATERIALS SHOWN WITHIN THE CONTRACT DOCUMENTS AND SHALL BE NOTED ON THE SHOP DWG SUBMITTAL BY THE JOIST MANUF.

SJ-4 JOIST BOTTOM CHORDS SHALL BE DOUBLE ANGLES.

SJ-5 ROOF JOISTS AND BRIDGING SHALL BE DESIGNED TO RESIST A NET UNFACTORED UPLIFT PRESSURE AS SHOWN ON PLANS.

SJ-6 JOIST SIZES SHOWN ON PLANS SHALL BE THE MINIMUM ACCEPTABLE.

SJ-7 EXTEND AND CONNECT ALL BOTTOM CHORDS AFTER THE DEAD LOAD IS APPLIED AT LOCATIONS ON PLANS.

SJ-8 JOIST SHOP DWGS SHALL BE SUBMITTED WITH CALCULATIONS SIGNED/SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. SHOP DWGS SUBMITTED NOT SIGNED/SEALED WILL BE RETURNED WITHOUT REVIEW.

SJ-9 JOIST MANUFACTURER SHALL COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL LOADS DUE TO EQUIPMENT TO BE HUNG FROM ROOF STRUCTURE. ALL ADD'L LOADS SHALL BE CLEARLY INDICATED ON SHOP DWG SUBMITTALS.

SJ-10 JOIST TO BE DESIGNED TO ALLOW 1" MAXIMUM DIFFERENCE IN CAMBER BETWEEN ADJACENT PARALLEL JOISTS.

SJ-11 ALL STEEL JOISTS GREATER THAN FORTY FEET IN LENGTH REQUIRE A ROW OF BOLTED BRIDGING TO BE IN PLACE PRIOR TO SLACKENING OF HOIST LINES.

REINFORCED CONCRETE

RC-1 ALL CONCRETE DESIGN AND PLACEMENT SHALL BE IN STRICT ACCORDANCE WITH THE ACI "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE," ACI 318.

RC-2 PROVIDE (4) TEST CYLINDERS FOR EACH 50 C.Y. OF CONCRETE PLACED OR FRACTION THEREOF.

RC-3 STRUCTURAL CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS AND SHALL DEVELOP THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS:

SPREAD AND WALL FOOTINGS	3000 PSI
COLUMNS AND WALLS	3000 PSI
BEAMS AND SLABS	3000 PSI
TILT UP WALLS	4000 PSI
ALL OTHER CONCRETE	3000 PSI

RC-4 USE REGULAR WEIGHT CONCRETE.

RC-5 STRUCTURAL CONCRETE SHALL CONFORM TO ACI 301 AND HAVE THE FOLLOWING SLUMPS, WATER CEMENT RATIO & AGGREGATE REQUIREMENTS:

LOCATION	SLUMP	W/C RATIO	MAX. AGGREGATE
FOOTINGS	4"+/-1"	0.55	ASTM #57
SLABS ON GRADE	4"+/-1"	0.52	ASTM #57
COLUMNS	5"+/-1"	0.48	ASTM #57
BEAMS AND SLABS	5"+/-1"	0.48	ASTM #57
TILT UP WALLS	5"+/-1"	0.48	ASTM #57
TIE BMS & TIE COL'S	5"+/-1"	0.48	ASTM #8 PEAROCK

SUBMIT DESIGN MIXES FOR APPROVAL AT LEAST ONE WEEK PRIOR TO CONCRETE POUR. DESIGN MIX SUBMITTALS MUST INDICATE PROPOSED LOCATION OR TYPE OF USE. FAILURE TO DO SO WILL CAUSE DELAY AND/OR REJECTION OF SUBMITTALS.

RC-6 MAXIMUM WATER TO CEMENT RATIO WHEN NO BACK-UP DATA IS AVAILABLE:
a) 3000 PSI, 28 DAY COMPRESSIVE STRENGTH; W/C RATIO 0.58 MAXIMUM (NON-AIR ENTRAINED), 0.47 MAXIMUM (AIR ENTRAINED)

RC-7 FLYASH, WHEN USED, SHALL BE LIMITED TO 20% OF THE CEMENTITIOUS MATERIAL. DO NOT USE FOR EXPOSED SLABS

RC-8 SUBMIT COPIES OF CONCRETE MIX DESIGN TO ENGINEER FOR APPROVAL INFORMATION SHALL INCLUDE CEMENT CONTENT, WATER/CEMENT RATIO, SLUMP, ENTRAINED AIR, ADMIXTURE CONTENT AND QUANTITY.

RC-9 ALL REINFORCEMENT SHALL BE FASTENED AND SECURED TOGETHER TO PREVENT DISPLACEMENT BY CONSTRUCTION LOADS OR THE PLACING OF CONCRETE

RC-10 THE USE OF JITTERBUGS TO CONSOLIDATE CONCRETE WILL NOT BE PERMITTED.

RC-11 ALL PUMPED CONCRETE WITH #57 AGGREGATE IS TO CONTAIN A HIGH RANGE WATER REDUCING AGENT. MINIMUM SIZE OF DISCHARGE TO BE 4" I.D.

RC-12 A 2" I.D. DISCHARGE MAY BE USED WITH #8 AGGREGATE. USE PLASTICIZER ADMIXTURE IF NECESSARY TO INCREASE SLUMPS BEYOND THAT NOTED ABOVE.

RC-14 ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED AND INSTALLED IN ACCORDANCE WITH ACI 318 AND ACI DETAILING MANUAL, ACI-315 LATEST EDITION.

RC-15 REINFORCEMENT WITH RUST, MILL SCALE OR A COMBINATION OF BOTH SHALL BE CONSIDERED SATISFACTORY, PROVIDED THE MINIMUM DIMENSIONS (INCLUDING HEIGHT OF DEFORMATIONS) AND WEIGHT OF A HAND-WIRE-BRUSHED TEST SPECIMEN ARE NOT LESS THAN APPLICABLE SPECIFICATION REQUIREMENTS IN THE ASTM STANDARDS REFERENCE IN ACI 318. REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60, LATEST REVISION, WITH SUPPLEMENT (S1), MARKED "S".

RC-16 ALL SLABS ON GRADE SHALL BE REINFORCED WITH:
4" SLAB ON GRADE: 6"X6" - W2.0xW2.0 WELDED WIRE REINFORCEMENT (WWR) LOCATED IN THE MIDDLE TO UPPER THIRD PORTION OF SLAB
6" SLAB ON GRADE: 6"X6" - W2.9xW2.9 WELDED WIRE REINFORCEMENT (WWR) LOCATED IN THE MIDDLE TO UPPER THIRD PORTION OF SLAB

W.W.R. SHALL BE SUPPORTED WITH APPROVED MATERIALS OR SUPPORTS NOT EXCEEDING 3 FT OR IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS

RC-17 WELDED WIRE FABRIC TO COMPLY WITH ASTM A1064 SHEETS ONLY, NO ROLLS. INSTALL ON BRICKS OR BOLSTERS, AT MID-DEPTH OF THE SLAB.

RC-18 LAP CONTINUOUS REINF. AS NOTED IN LAP SPLICE SCHEDULE OR MIN 40 BAR DIA. LAP CONT. BOTTOM STEEL OVER SUPPORT AND CONT. TOP STEEL AT MIDSPAN UNLESS OTHERWISE SPECIFIED.

RC-19 TERMINATE ALL DISCONTINUOUS TOP BARS WITH STANDARD 90 DEGREE HOOK (PLACED VERTICALLY) UNLESS NOTED OTHERWISE.

RC-20 PROVIDE CONCRETE COVER OVER REINFORCEMENT AS FOLLOWS, UNLESS OTHERWISE NOTED:

MINIMUM COVER:	LOCATION AND CONDITION:
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	ALL BARS 3"
B. CONCRETE EXPOSED TO EARTH OR TO WEATHER	#6 OR GREATER 2" #5 OR SMALLER 1-1/2"
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND 1.SLABS, WALLS, AND JOISTS	#11 OR SMALLER 3/4" #14-#18 1-1/2"
2.BEAMS AND COLUMNS: (PRIMARY REINFORCEMENT, TIES, STIRRUPS, AND SPIRALS)	ALL BARS 1-1/2"
D.SLABS ON GRADE:	SINGLE MAT, TOP 1/2 TO 1/3 OF THICKNESS

RC-21 SLEEVE ALL PENETRATIONS THROUGH BEAMS AND SLABS INDIVIDUALLY. CORE DRILLING WILL NOT BE PERMITTED. SUBMIT LOCATION AND SIZE OF SLEEVES THROUGH BEAMS TO ENGINEER FOR REVIEW PRIOR TO CASTING CONCRETE. WHERE PIPING PENETRATES CONCRETE BEAMS, PLACE TWO #3 STIRRUPS @ 3" O.C. EACH SIDE OF PIPE, UNLESS OTHERWISE NOTED.

RC-22 NO REINFORCING BARS SHALL BE CUT TO ACCOMMODATE THE INSTALLATION OF ANCHORS, EMBEDS OR OTHER ITEMS.

RC-23 USE THE STRUCTURAL DRAWINGS INCLUDING REVISIONS AND ADDENDA IN CONJUNCTION WITH REVIEWED SHOP DRAWINGS FOR PLACEMENT OF REINFORCING.

RC-24 AT CHANGES IN DIRECTION OF CONCRETE WALLS, BEAMS & STRIP FOOTINGS, PROVIDE CORNER BARS OF SAME SIZE AND QUANTITY UNLESS NOTED OTHERWISE AS HORIZONTAL STEEL.

RC-25 ALL EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE PRIOR TO CONCRETE PLACEMENT.

RC-26 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FOR PROVIDING THE CONSTRUCTION OF ALL FORMWORK IN ACCORDANCE WITH ACI 347.

RC-27 PLACE CONCRETE PER ACI 304. USE INTERNAL MECHANICAL VIBRATION FOR ALL CONCRETE. LIMIT MAXIMUM FREE FALL DROP OF CONCRETE TO 6'-0" FOR #57 AGGREGATE AND 8'-0" FOR #8 AGGREGATE. ALL PRECAUTIONS SHOULD BE TAKEN TO AVOID SEGREGATION OF CONCRETE DURING PLACEMENT.

RC-28 FOOTING SIZES SHOWN ARE FOR FOOTINGS CONSTRUCTED WITH SIDE FORMS. IF SOIL MATERIAL CAN HOLD A VERTICAL SHAPE, IT CAN BE USED AS AN EARTH FORM PROVIDED FOOTING WIDTH IS INCREASED 1" IN EACH HORIZONTAL DIRECTION. ALL SLOUGHED MATERIAL SHALL BE REMOVED FROM EXCAVATION BEFORE AND DURING PLACEMENT OF CONCRETE.

RC-29 PLACEMENT OF CONDUIT AND PIPES IN CONCRETE SHALL CONFORM TO ACI 318, SECTION 20.7 AND 26.8

RC-30 REFERENCE ACI310.1-20 FOR REQUIREMENTS OF POLISHED CONCRETE

STRUCTURAL STEEL

S-1 FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION," FIFTEENTH EDITION AND THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS," LATEST EDITION.

S-2 MATERIAL SHALL CONFORM TO THE FOLLOWING, EXCEPT AS NOTED:
STRUCTURAL STEEL: GRADE A992 (Fy = 50 ksi)
ANGLES AND PLATES: ASTM A36 (Fy = 36 ksi)
ANCHOR BOLTS AND MACHINE BOLTS: ASTM A307 OR A36.
STRUCTURAL STEEL TUBING; ASTM A500, GRADE B, TYPE E OR S
HEADED STUD ANCHORS ASTM A108 GRADE S 1010 THRU 1020

S-3 UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE 5/8" DIAMETER A-325 AND SHALL BE BEARING TYPE CONNECTIONS.

S-4 ALL SHOP AND FIELD WELDING SHALL BE DONE BY CURRENTLY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE," LATEST EDITION.

S-5 USE E70XX ELECTRODES FOR ALL WELDING UNLESS NOTED OTHERWISE. GRIND SMOOTH ALL EXPOSED WELDS.

S-6 DO NOT WELD TO EMBEDS UNTIL CONCRETE HAS CURED AT LEAST 72 HOURS. USE APPROPRIATE WELDING PROCESSES TO LIMIT HEAT BUILDUP IN EMBED TO AVOID PLATE EXPANSION AND CRACKING OF CONCRETE.

S-7 HEADED STUD ANCHORS SHALL BE A307 AS MANUFACTURED BY NELSON STUD OR APPROVED EQUIVALENT. STUD WELDING SHALL CONFORM TO AWS D1.1 "STRUCTURAL WELDING CODE."

S-8 SURFACE PREPARATION AND SHOP PAINTING OF ALL STRUCTURAL STEEL MEMBERS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE "CODE OF STANDARD PRACTICE "OF AISC.

S-9 SHOP PAINT-METAL ALKYD-OIL PRIMER, ANY OF THE FOLLOWING: SEE ARCHITECT FOR PREFERRED COLOR. MANUFACTURER DESIGNATION PORTER NO. 296 MOBILE NO. 13F812 TINEMIC NO. 1009 AMERON NO. 5102 AMERCOAT.

S-10 SHOP PAINT ALL STEEL EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE, FIELD WELDED, OR COVERED WITH SPRAY-ON FIRE PROOFING. APPLY PAINT IN ACCORDANCE WITH SSPC-PA1, SHOP FIELD AND MAINTENANCE PAINTING. APPLY PAINT IN SUFFICIENT VOLUME OR COATS TO PROVIDE A MINIMUM DRY FILM THICKNESS OF AT LEAST 3 MILS BUT NOT MORE THAN 5 MILS.

S-11 GROUT UNDER BEARING PLATES SHALL BE NON-METALLIC, NON-SHRINK TYPE WITH A COMPRESSIVE STRENGTH OF AT LEAST 6000 PSI IN 7 DAYS. VIBROPRUF #11, BY LAMBERT CORPORATION, OR ACCEPTED SUBSTITUTE.

S-12 ALL STEEL EXPOSED TO EXTERIOR CONDITIONS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

TILT UP PANELS

TUP-1 ALL PANELS ARE VIEWED FROM THE INSIDE OF BUILDING LOOKING OUT.

TUP-2 PANEL THICKNESS SHALL BE AS INDICATED ON PLANS. SPECIAL ATTENTION MUST BE GIVEN TO THE LOCATION AND PLACEMENT OF THE REINFORCING.

TUP-3 REFER TO THE ARCHITECTURAL DRAWINGS FOR FINISH REQUIREMENTS, CHAMFERS, REVEALS, ETC.

TUP-4 PANELS SHALL NOT BE LIFTED UNTIL CONCRETE HAS ATTAINED THE MINIMUM MODULES OF RUPTURE AND COMPRESSIVE STRENGTH AS REQUIRED BY LIFTING ENGINEER AND UNTIL PANELS HAVE REACHED A MINIMUM OF 75% OF THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH AS VERIFIED BY TEST.

TUP-5 THE CONTRACTOR SHALL PROVIDE DESIGN FOR THE LIFT INSERTS AND ANY ADDITIONAL REINFORCING STEEL REQUIRED FOR THE LIFTING OPERATION. HOWEVER, NO ADDITIONAL REINFORCING SHALL BE ADDED WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER. THE DESIGNERS OF THE LIFTING INSERTS MUST CONSIDER THE REINFORCING ALREADY PRESENT IN THE PANELS AS INDICATED IN THIS SET OF CONSTRUCTION DRAWINGS.

TUP-6 THE CONTRACTOR SHALL CHECK ALL PANELS DIMENSIONS, PLATE LOCATIONS AND DETERMINE THE LOCATIONS OF ALL OPENINGS REQUIRED. NO PANEL WORK SHALL BE PERFORMED WITHOUT CONTRACTORS APPROVAL OF ALL OF THE ABOVE. THE CONTRACTOR IS INDICATING THAT HE HAS REVIEWED THE ABOVE AND APPROVES THE PANEL DRAWINGS FOR ACCURACY BY THE COMMENCEMENT OF PANEL CONSTRUCTION EVEN IF FORMAL STAMPED APPROVAL HAS NOT BEEN INDICATED ON THOSE DRAWINGS.

TUP-7 MISCELLANEOUS OPENINGS MAY BE REQUIRED FOR FIRE LINES, PLUMBING, SANITARY LINES, ELECTRICAL CONDUITS, ETC. CORE DRILLING OR SAWCUTTING AFTER ERECTION OF PANELS MUST HAVE THE APPROVAL OF THE ARCHITECT AND ENGINEER PRIOR TO PERFORMANCE OF THE WORK.

TUP-8 THE REINFORCING STEEL SUPPLIER SHALL PROVIDE SHOP DRAWINGS INDICATING ALL NECESSARY INFORMATION REQUIRED TO ACCURATELY POSITION THE REBAR AS INDICATED. ENSURE CHAIRS, BOLSTERS OR OTHER MEANS OF SUPPORTING REBARS AND PROVIDE AND ACCURATELY DETAILED. ALL REINFORCING BARS SHALL BE 40 BAR DIA LAP.

TUP-9 THE SLAB SHALL BE PRETREATED WITH A RELEASING AGENT PRIOR TO PLACEMENT OF CONCRETE FOR THE TILT UP MANUFACTURER'S REQUIREMENTS SHALL BE UTILIZED IN PLACING OF THE RELEASING AGENT AND COMPATIBILITY WITH ANY FUTURE COATINGS SHALL BE VERIFIED.

TUP-10 SEE SHEET S400 FOR TILT-UP PANEL DETAILS.

METAL DECKING

MD-1 ROOF METAL DECK SHALL BE 1.5 TYPE "B" (G-60) OR APPROVED EQUAL.

MD-2 METAL DECK MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE AND ALL DESIGN SHALL BE IN ACCORDANCE WITH APPLICABLE STANDARDS.

MD-3 SEE FASTENER REQUIREMENTS ON FRAMING PLANS FOR SCREWING AND SIDE LAP REQUIREMENTS.

MD-4 DECK SUBMITTALS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER AND SHALL INCLUDE THE INTENDED FASTENING PATTERNS AND SHALL INDICATE THE CAPACITY UNDER COMBINED STRESSES DUE TO UPLIFT & DIAPHRAGM ACTION.

LIGHT GAUGE METAL STUDS AND TRUSSES:

LG-1 LIGHT GAGE METAL STUDS AND THEIR CONNECTIONS TO EACH OTHER SHALL BE DESIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. SIGNED AND SEALED EMBOSSED SHOP DRAWINGS SHOWING STUD CONFIGURATION WITH MEMBER SIZES & CONNECTIONS, DESIGN LOADS, DURATION FACTORS AND ERECTION DETAILS MUST BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.

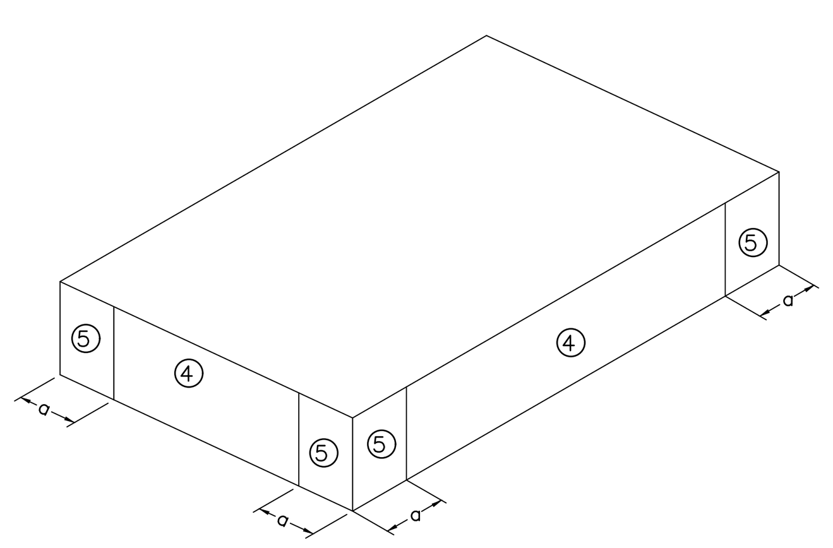
LG-2 STEEL GRADES:
12 & 14 GA. STUDS FY (MIN) = 50 KSI; 16 GA. STUDS FY (MIN) = 33 KSI
18, 20 GA. STUDS (AND ALL TRACK) FY (MIN) = 33 KSI
FINISH: GALVANIZED IN ACCORDANCE WITH ASTM A924. (G60 IN CONFORMANCE WITH ASTM C955). SECTION PROPERTY AND DESIGN TO BE IN COMPLIANCE WITH AISI SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.

LG-3 MISCELLANEOUS FRAMING AND DETAILS NOT SHOWN TO BE INCLUDED AS REQUIRED TO PERFORM INTENDED FUNCTION ALSO, REFER TO ARCHITECTURAL SHEETS FOR ADDITIONAL DESIGN DETAIL REQUIREMENTS. DEFLECTION TO BE LIMITED TO L/240. BRIDGING TO BE SUPPLIED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS. (5'-0" O.C. MAX. AND WITHIN 1'-0" OF DEFLECTION TRACKS)

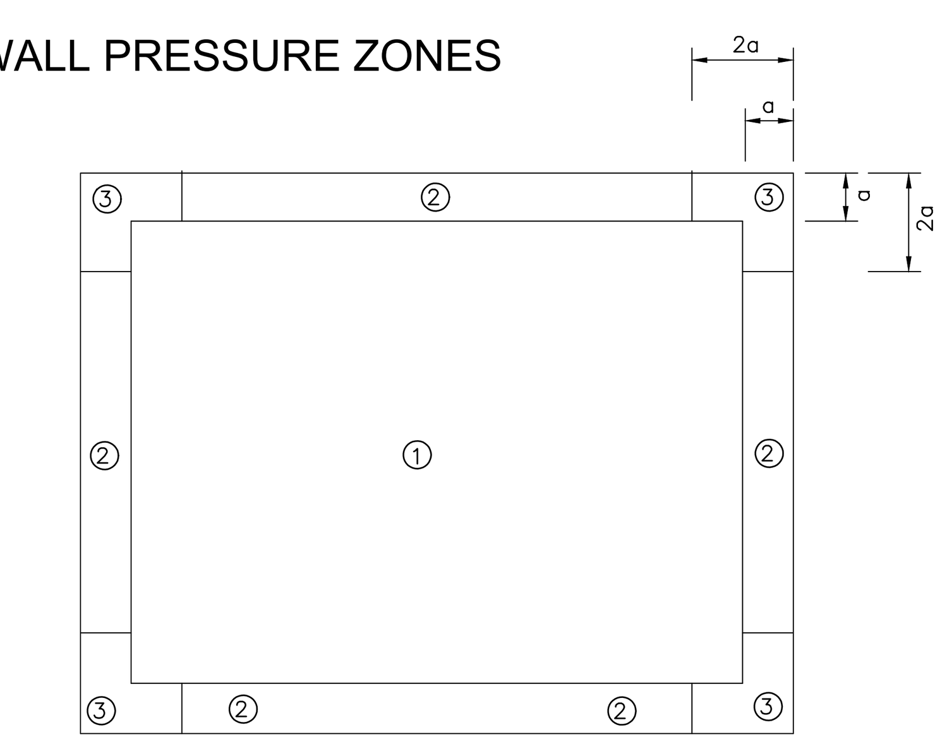
COMPONENT AND CLADDING DESIGN WIND PRESSURES

WIND PRESSURE (PSF) @ 150 MPH, EXP C				
ROOF ZONES, Ultimate Pressures				
ZONE	AREA	POS	NEG	w/ OH
1	10	32.9	-77.3	-92.1
1	20	29.7	-77.3	-92.1
1	50	25.4	-65.7	-89.0
1	100	22.2	-56.8	-86.6
2	10	32.9	-123.4	-138.2
2	20	29.7	-108.1	-128.8
2	50	25.4	-87.8	-116.3
2	100	22.2	-72.5	-106.9
3	10	32.9	-159.1	-192.0
3	20	29.7	-129.9	-159.0
3	50	25.4	-91.2	-115.2
3	100	22.2	-91.2	-115.2
WALL ZONES, Ultimate Pressures				
4	10	54.4	-51.3	-
4	20	52.0	-49.3	-
4	50	48.6	-46.5	-
4	100	46.2	-44.3	-
5	10	54.4	-63.4	-
5	20	52.0	-59.1	-
5	50	48.6	-53.4	-
5	100	46.2	-49.3	-
WALL ZONES, Nominal Pressures (V=116mph)				
4	10	32.6	-30.8	-
4	20	31.2	-29.6	-
4	50	29.2	-27.9	-
4	100	27.7	-26.6	-
5	10	32.6	-38.0	-
5	20	31.2	-35.5	-
5	50	29.2	-32.1	-
5	100	27.7	-29.6	-

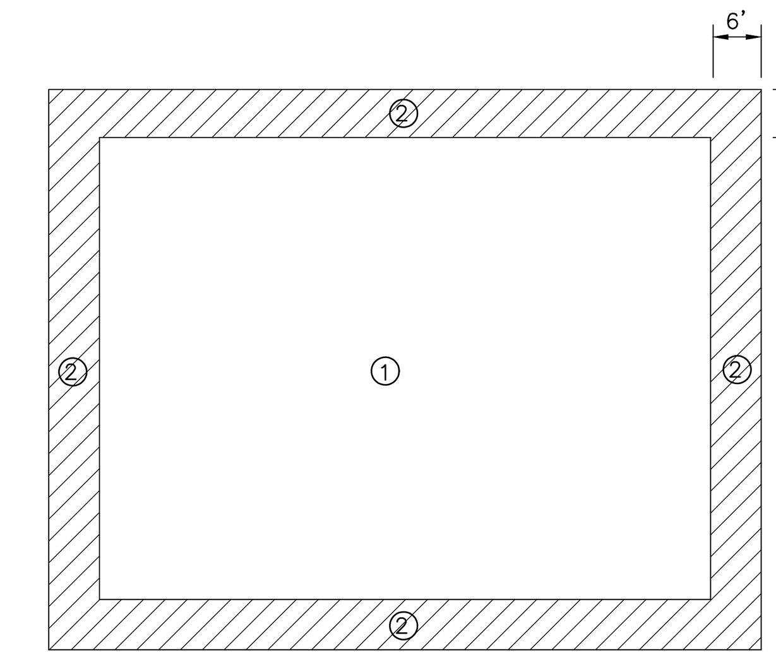
ZONE 1 - INTERIOR AREAS OF ROOF (INCLUDES ZONES 1 AND 1')
ZONE 2 - EDGE ZONE (INCLUDES ZONES 2, 2e, 2n, AND 2r)
ZONE 3 - CORNER ZONE (INCLUDES ZONES 3, 3e, AND 3r)
ZONE 4 - INTERIOR AREAS OF WALL
ZONE 5 - EDGE ZONES OF WALL
DISTANCE "a" IS DEFINED AS 6.0 FT FROM DIAPHRAGM BOUNDARY FOR ROOFS AND 6.0 FT FROM ANY CORNER OF THE BUILDING FOR WALLS



WALL PRESSURE ZONES

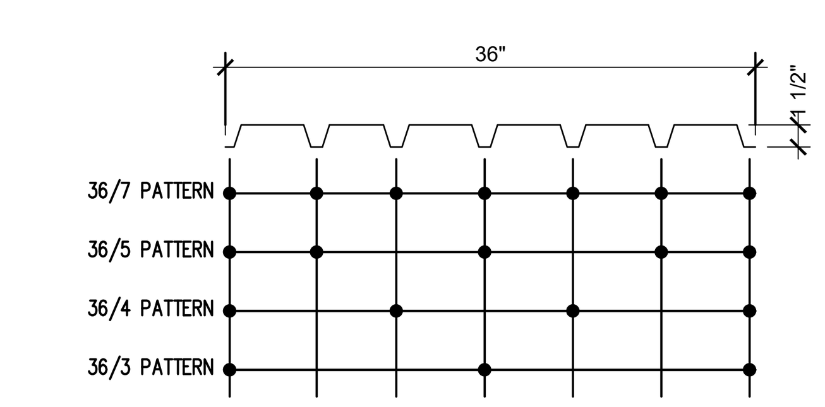


ROOF PRESSURE ZONES



ROOF DECK FASTENING PLAN

LEGEND
ZONE 1 (unhatched)
ZONE 2 (hatched)



1 ROOF DECK TYPE 'B' PATTERN DIAGRAM
N.T.S.

ROOF DECK FASTENING PATTERN

BUILDING	ZONE	DECK GAGE	ROOF DECK MINIMUM FASTENING PATTERN
HIGH ROOF	①	20 GA	36/5 #12 TEK SCREWS W/ (8) #10 TEK SCREW SIDELAPS
	②	20 GA	36/5 #12 TEK SCREWS W/ (10) #10 TEK SCREW SIDELAPS

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Certificate of Authorization#:
CA 27800

project number
MK 23-032

EPLER PARK

PALM BAY ROAD
PALM BAY, FL

issued for	date
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item	description	date

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STRUCTURAL NOTES

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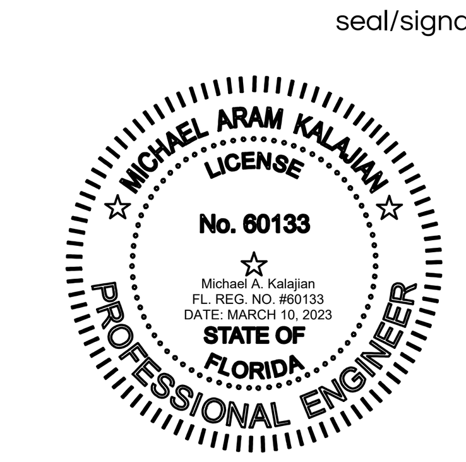
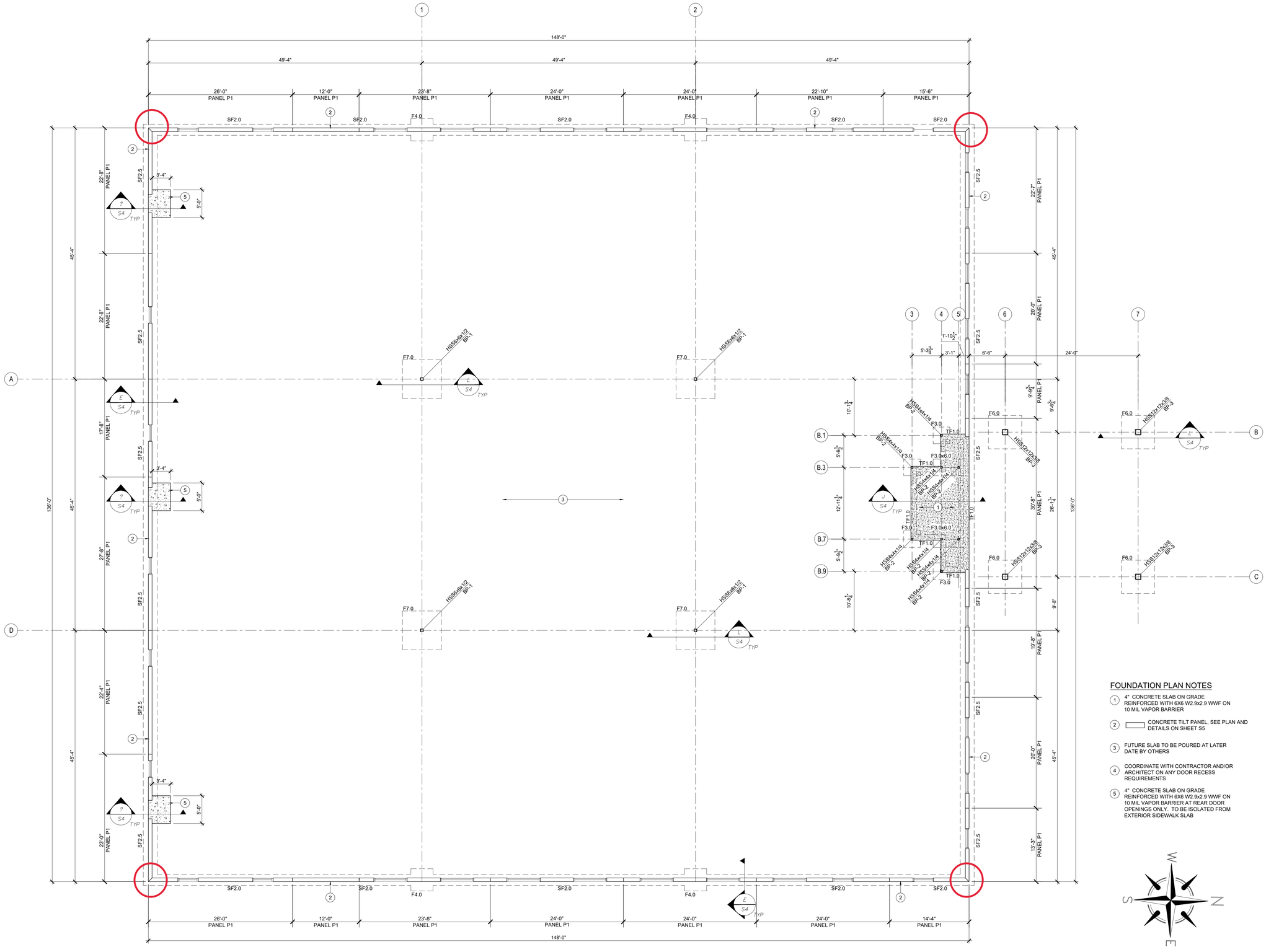


Registered Engineer: Michael A. Kalajian
Registered Engineer License: PE 60133

sheet number
S1

drawn by: MAK checked by: MAK



FOUNDATION PLAN NOTES

1. 4" CONCRETE SLAB ON GRADE REINFORCED WITH 6X6 W2.9xW2.9 WWF ON 10 MIL VAPOR BARRIER
2. CONCRETE TILT PANEL, SEE PLAN AND DETAILS ON SHEET S5
3. FUTURE SLAB TO BE POURED AT LATER DATE BY OTHERS
4. COORDINATE WITH CONTRACTOR AND/OR ARCHITECT ON ANY DOOR RECESS REQUIREMENTS
5. 4" CONCRETE SLAB ON GRADE REINFORCED WITH 6X6 W2.9xW2.9 WWF ON 10 MIL VAPOR BARRIER AT REAR DOOR OPENINGS ONLY. TO BE ISOLATED FROM EXTERIOR SIDEWALK SLAB

FOUNDATION PLAN

T/FOUNDATION EL. 98'-8" TYP. U.O.N.
TSLAB EL. 100'-0" TYP. U.O.N.

SCALE:1/8"=1'-0"

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FOUNDATION PLAN

seal/signature

MICHAEL ARAM KALAJIAN
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S2

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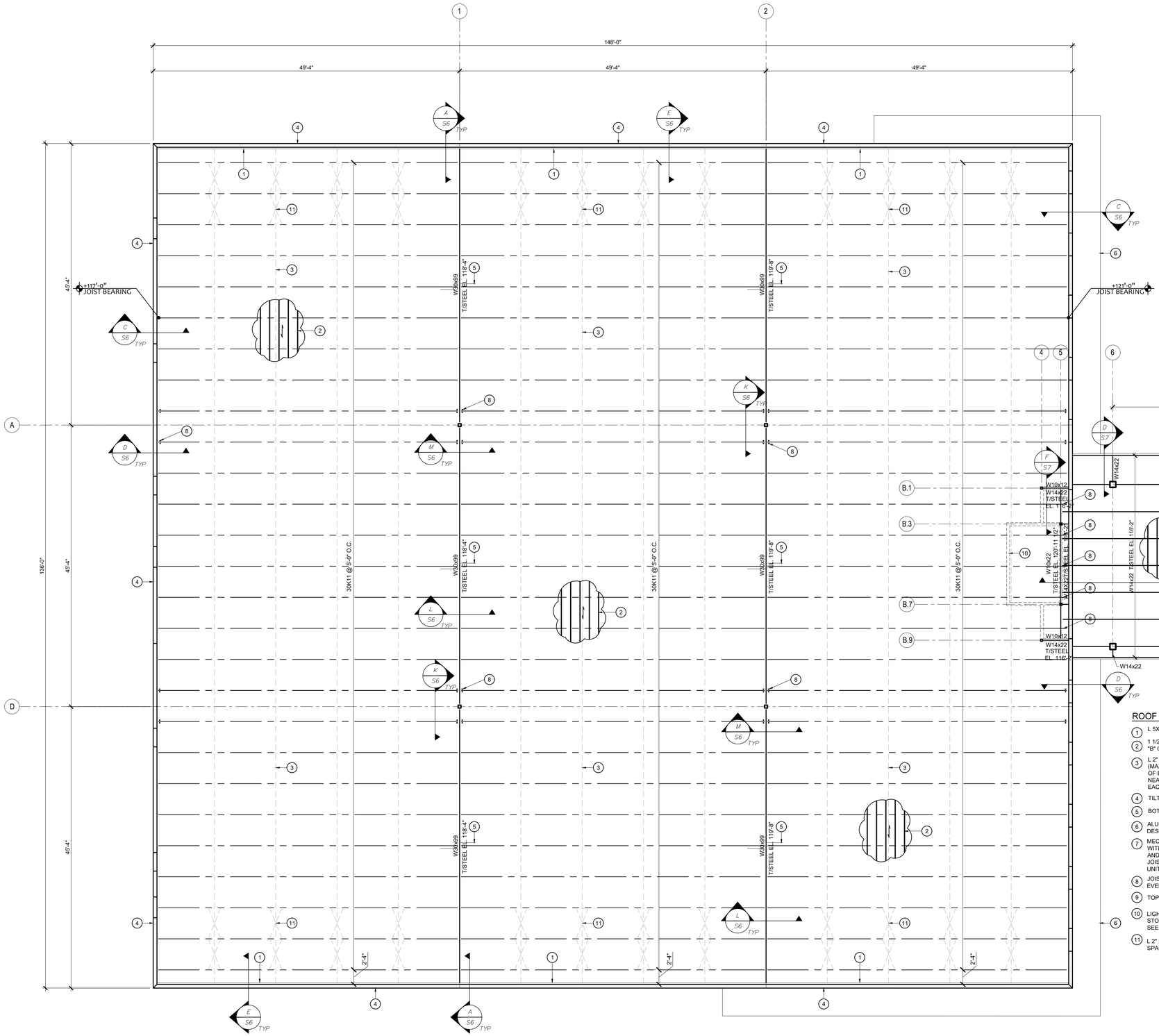
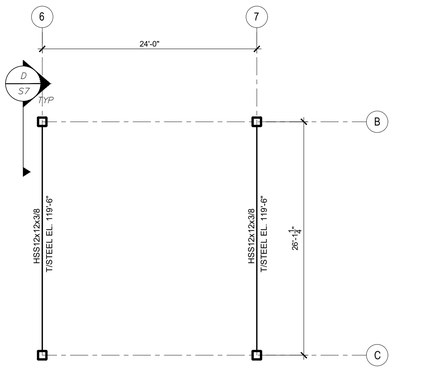


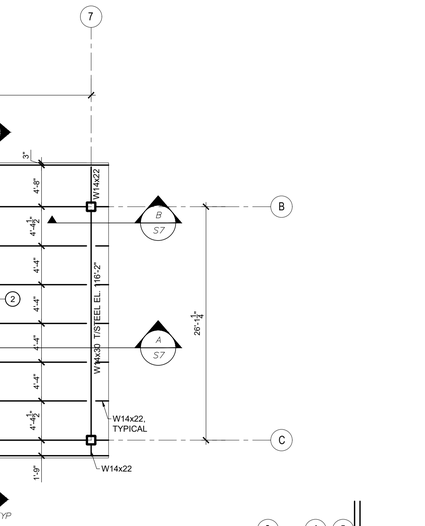
ROOF FRAMING PLAN

SCALE:1/8"=1'-0"



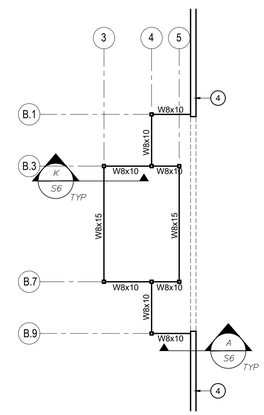
UPPER ROOF FRAMING PLAN

SCALE:1/8"=1'-0"



ROOF FRAMING PLAN NOTES

1. L 5X3X1/4" LLV DECK SUPPORT ANGLE, SEE DETAIL E/S6
2. 1 1/2", 20GA., GALVANIZED ROOF DECK, VULCRAFT TYPE "B" OR APPROVED EQUAL
3. L 2" x 2" x ¼" HORIZONTAL BRIDGING, EQUALLY SPACED (MAX 10'-0"). IN ADDITION A MINIMUM OF A SINGLE LINE OF BOTTOM CHORD BRIDGING MUST BE PROVIDED NEAR THE FIRST BOTTOM CHORD PANEL POINT AT EACH END OF JOIST DUE TO WIND UPLIFT, TYPICAL.
4. TILT UP PANEL
5. BOTTOM FLANGE BRACING, SEE DETAILS D/S6 AND K/S6
6. ALUMINUM PRE-ENGINEERED METAL CANOPY DESIGNED BY SPECIALTY ENGINEER
7. MECHANICAL UNIT LOCATION TO BE COORDINATED WITH MECHANICAL DRAWINGS. VERIFY WEIGHT, SIZE AND LOCATION WITH MECHANICAL ENGINEER AND JOIST SPECIALTY ENGINEER PRIOR TO PLACEMENT OF UNIT, SEE DETAIL G&H/S6
8. JOIST SHALL BE FIELD BOLTED ON EACH SIDE OF EVERY COLUMN. SEE DETAILS C&M/S6
9. TOP CHORD JOIST EXTENDER
10. LIGHT GAUGE METAL STUD WALL ABOVE STOREFRONT,DESIGNED BY SPECIALTY ENGINEER. SEE ARCHITECTURAL FOR FULL EXTENT OF WALL
11. L 2" x 2" x ¼" WELDED DIAGONAL BRIDGING, EQUALLY SPACED (MAX 13'-0") PER DETAIL E/S6.



ENTRANCE FRAMING PLAN

T/STEEL EL. 110'-8" VERIFY WITH ARCH DRAWINGS SCALE:1/8"=1'-0"

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ROOF FRAMING PLAN

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Michael A. Kalajian
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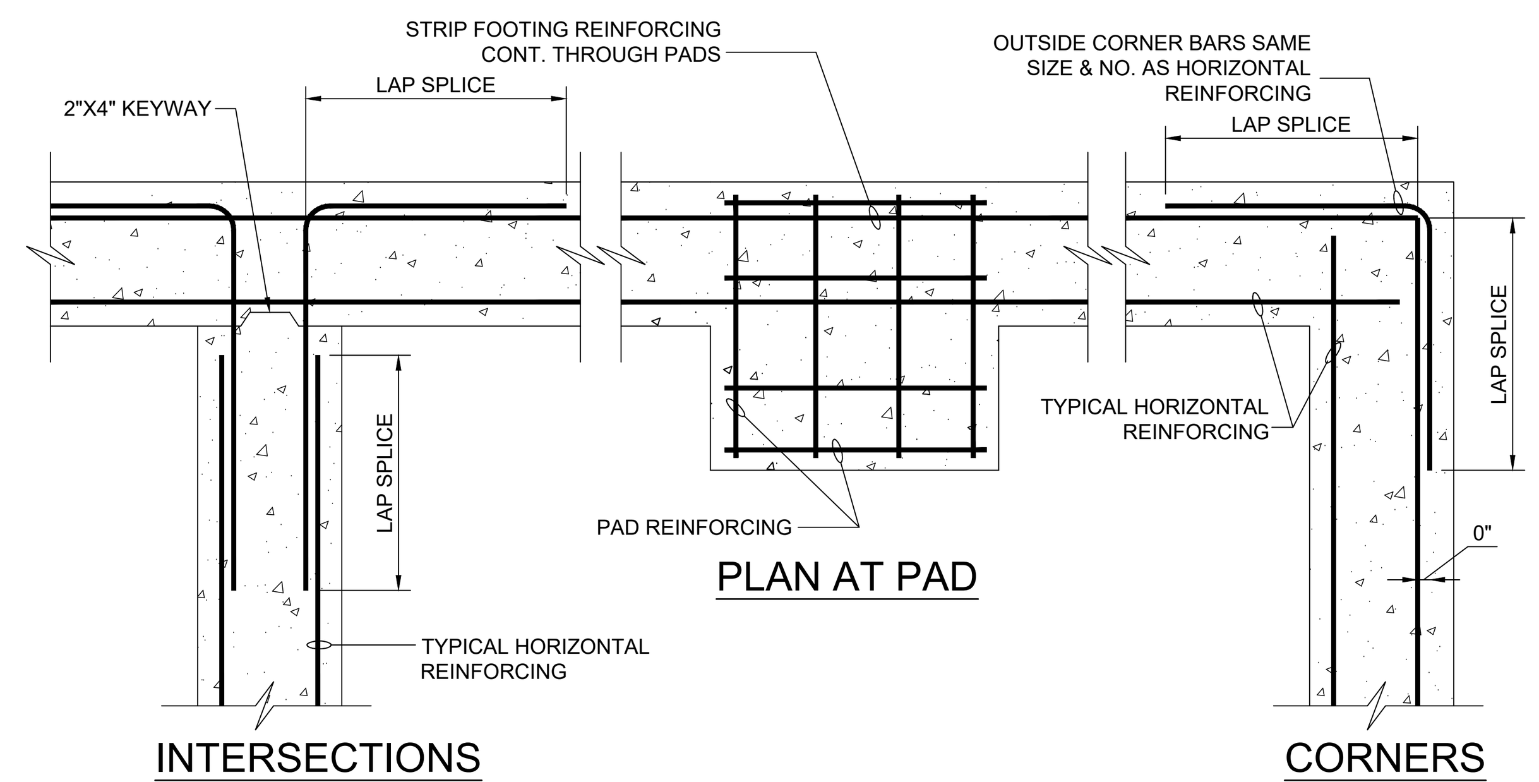
sheet number
S3

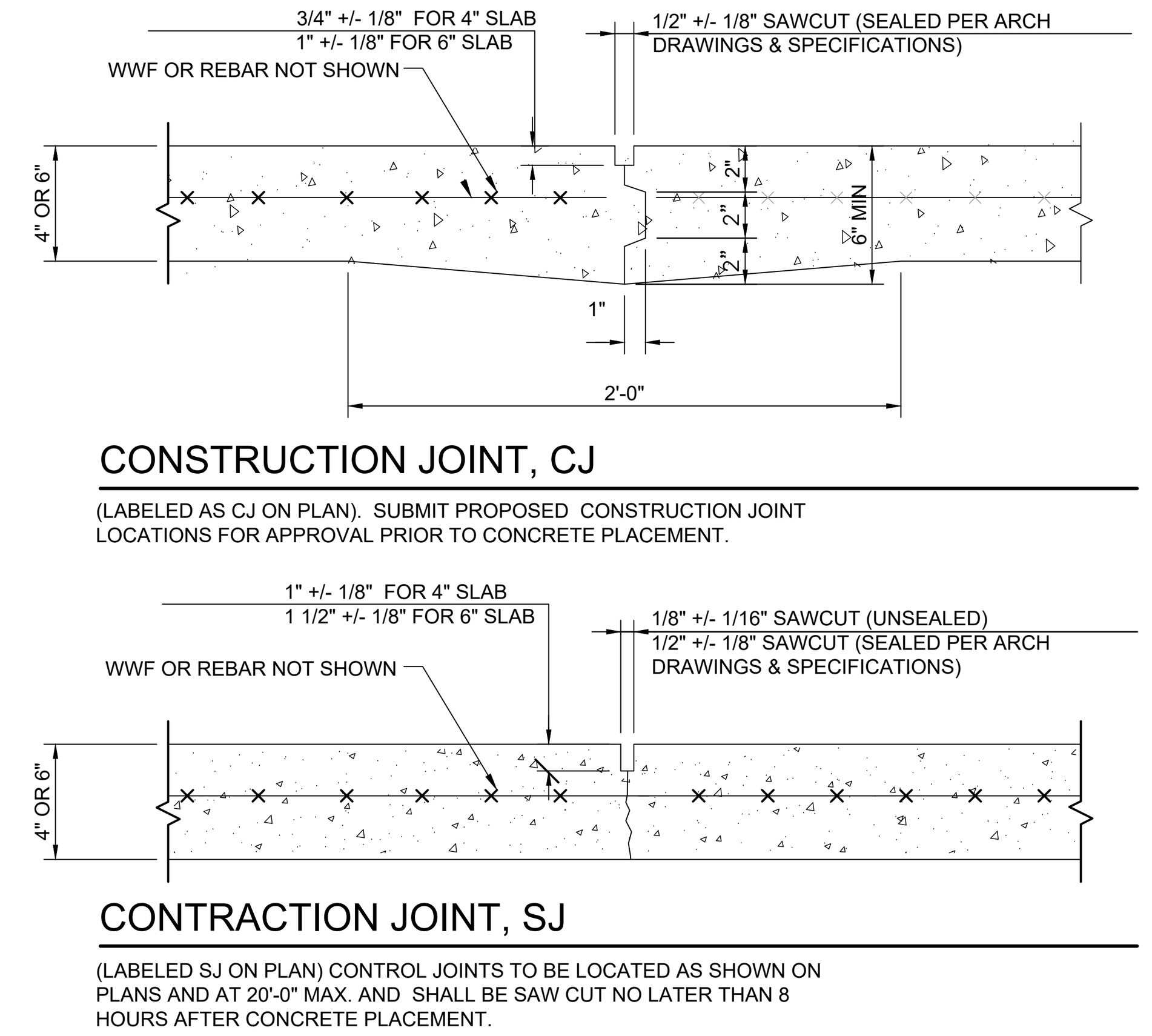
drawn by: MAK checked by: MAK

LAP SPLICE LENGTHS

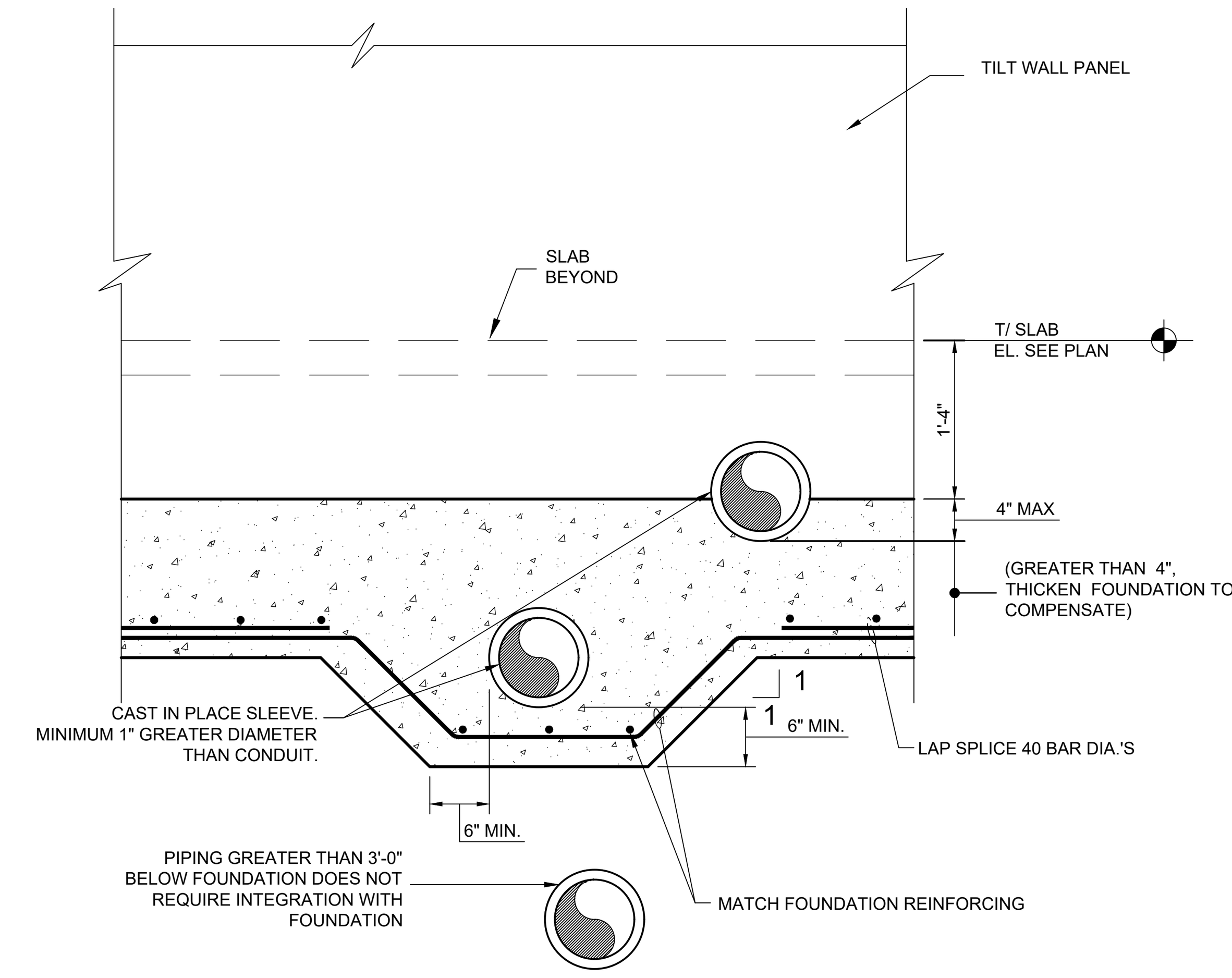
fc'	BAR NO. 3	4	5	6	7	8	9	10
COMPRESSION LAP SPLICE								
3000	12	15	19	23	27	30	34	39
CLASS A TENSION LAP SPLICE								
3000	13	17	21	25	36	42	47	53
4000	11	15	18	22	32	36	41	46
5000	10	13	16	20	28	32	36	41
CLASS B TENSION LAP SPLICE								
3000	16	22	27	33	47	54	61	68
4000	14	19	23	28	41	47	53	59
5000	13	17	21	25	37	42	47	53



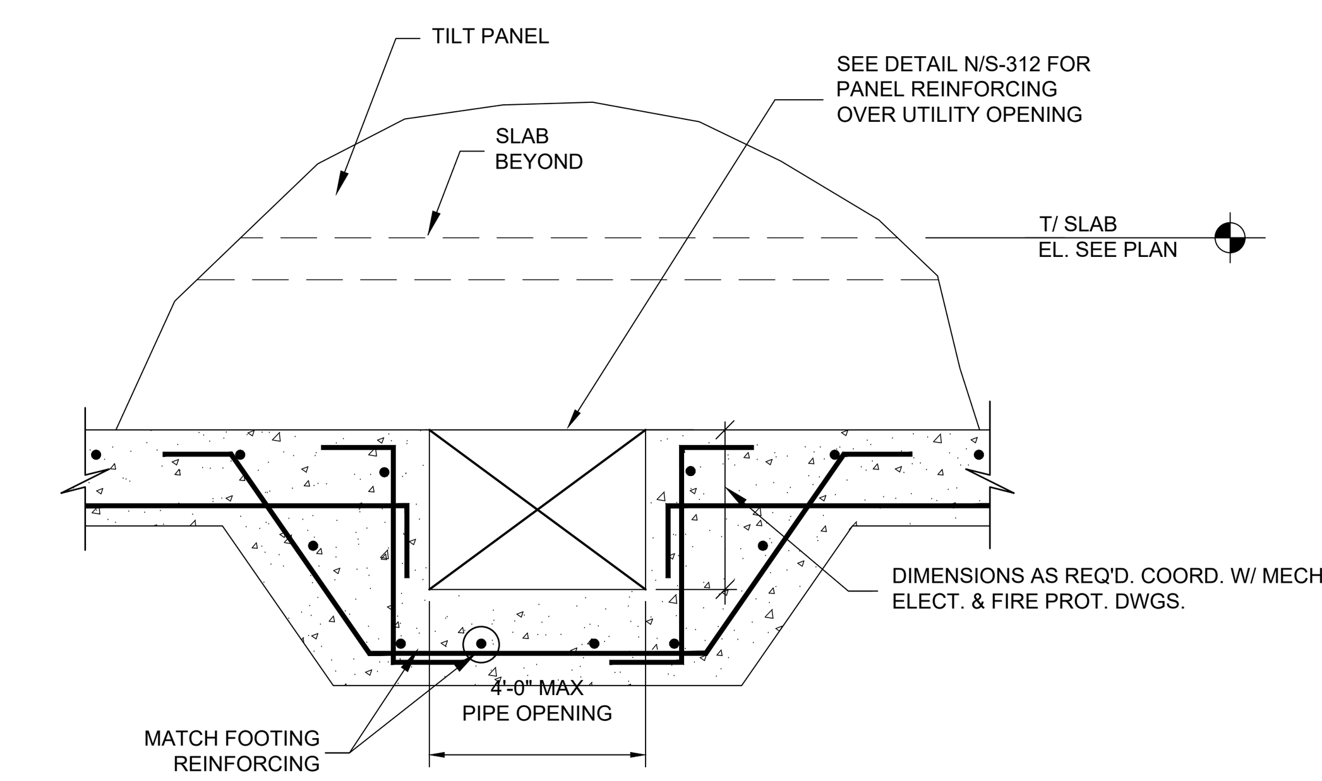
A — TYP. HORIZONTAL REINF-CONCRETE BEAMS AND FOOTINGS
SCALE 3/4"=1'-0"



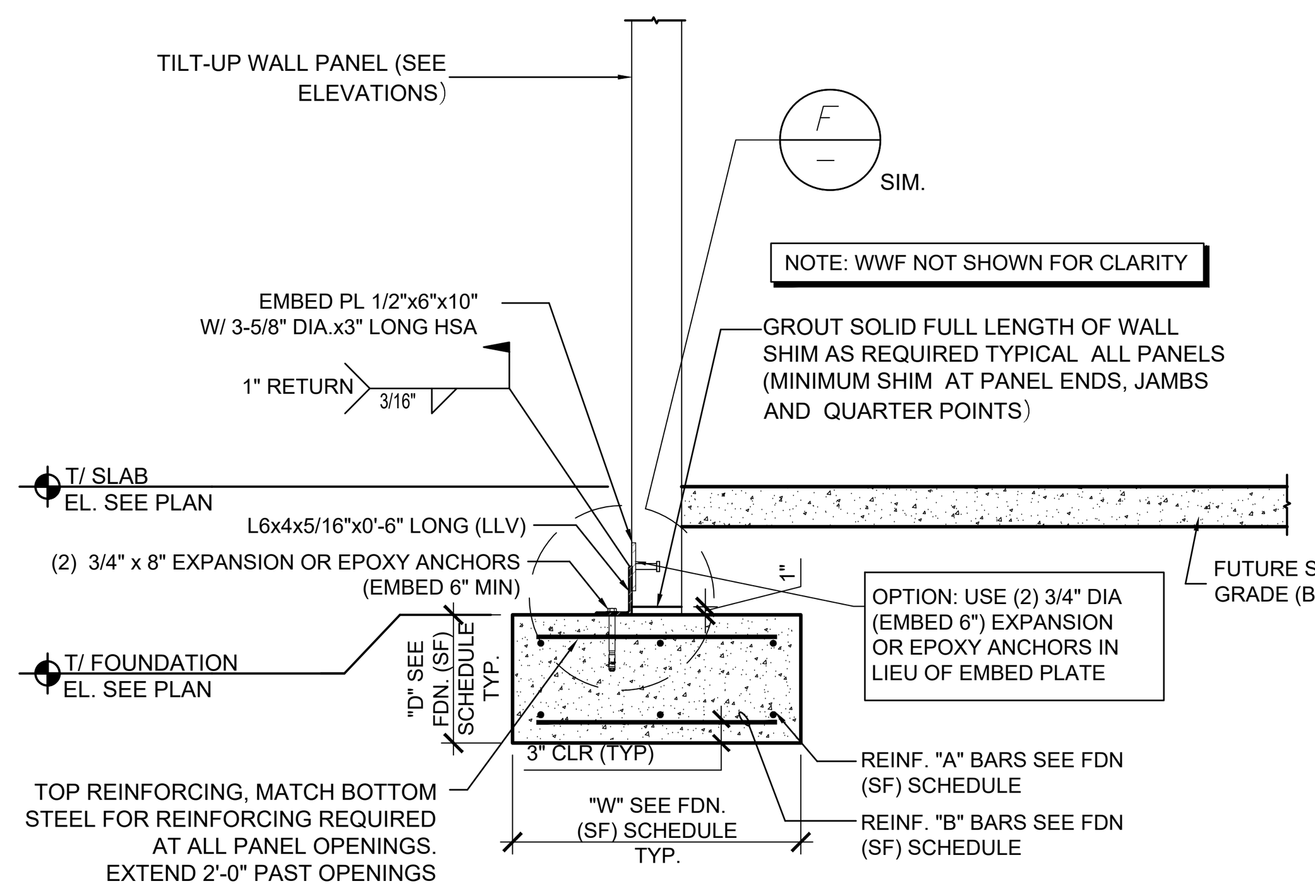
B — TYPICAL CONTROL JOINTS
SCALE 3/4"=1'-0"



C — FOUNDATION CONDUIT SLEEVE
SCALE 3/4"=1'-0"

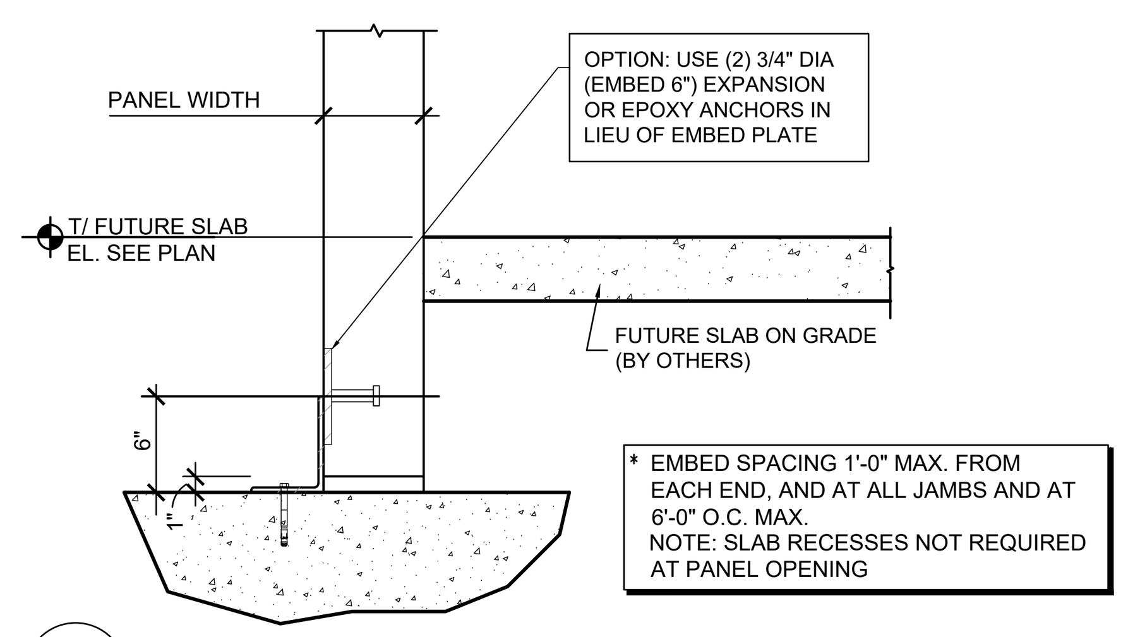


D — TYPICAL STEP FOOTING FOR UTILITIES
SCALE 3/4"=1'-0"

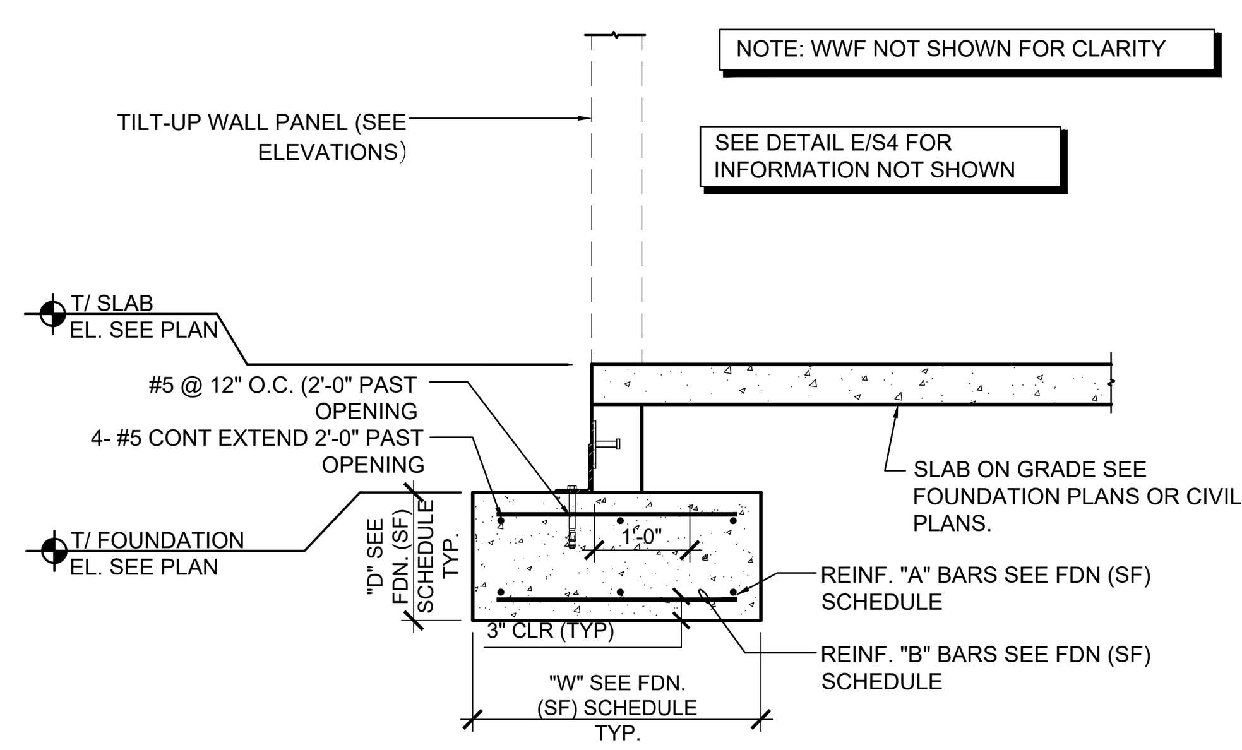


E — TILT-UP TO (SF) AND CONNECTION DETAIL
SCALE 1/2"=1'-0"

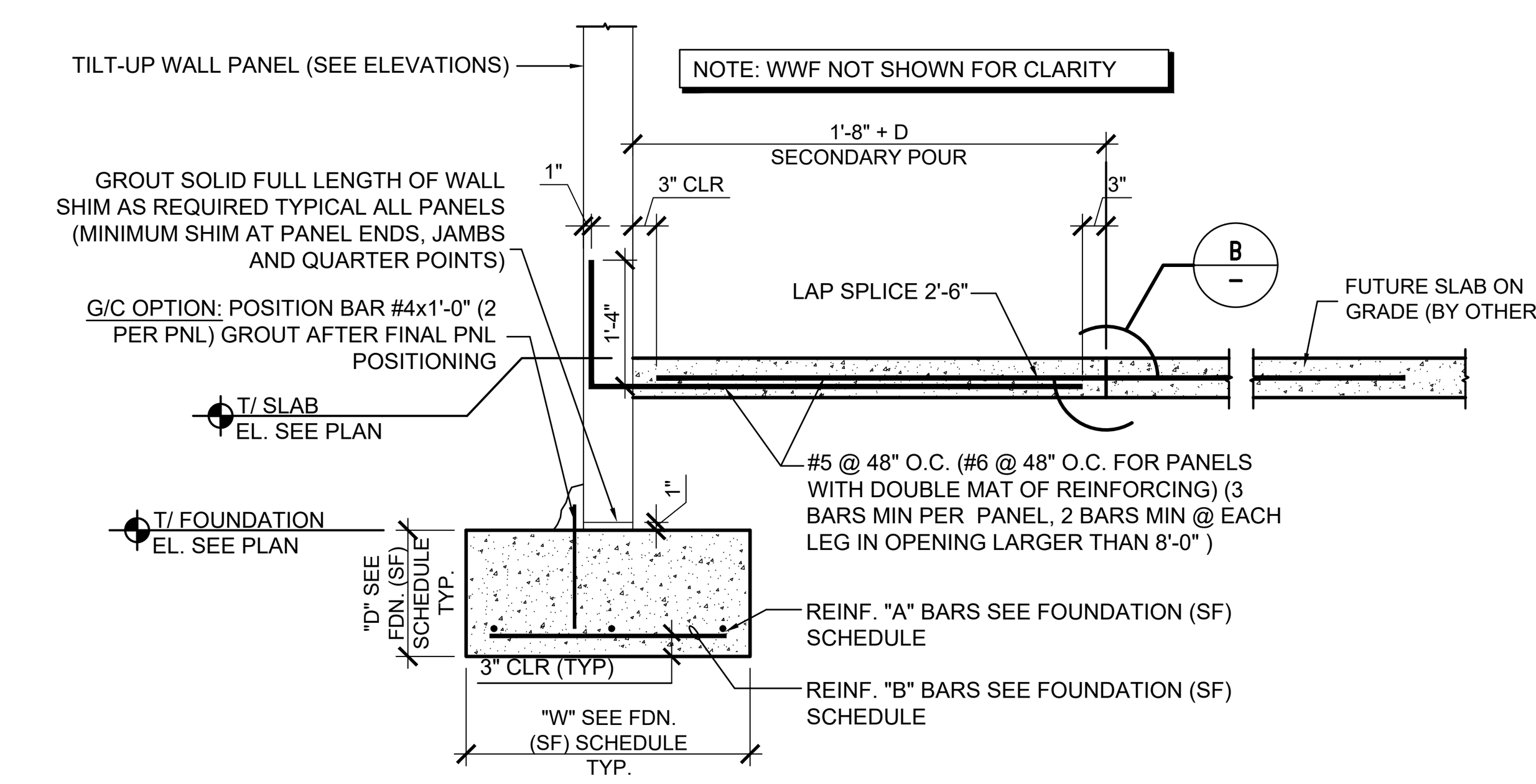
SPREAD FOOTING (SF) FOUNDATION SCHEDULE				
FOUNDATION DESIGNATION	DIMENSION "W"	DIMENSION "D"	REBAR "A"	REBAR "B"
SF2.0	2'-0"	1'-4"	(3)#5	#5@24" O.C.
SF2.5	2'-6"	1'-4"	(3)#5	#5@24" O.C.



F — DIM. DETAIL
1 1/2"=1'-0"

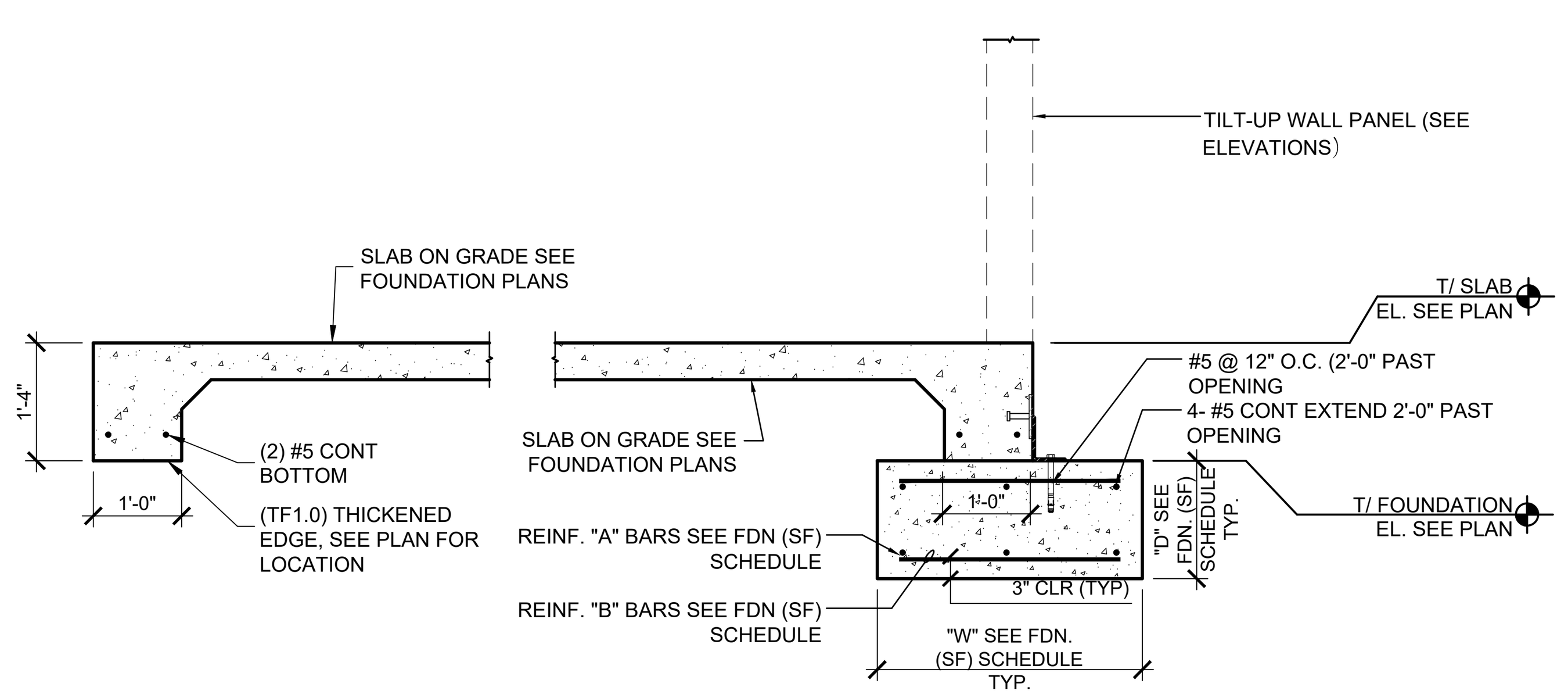


G — TYP. SF FOUNDATION AT OPENING
SCALE 1/2"=1'-0"

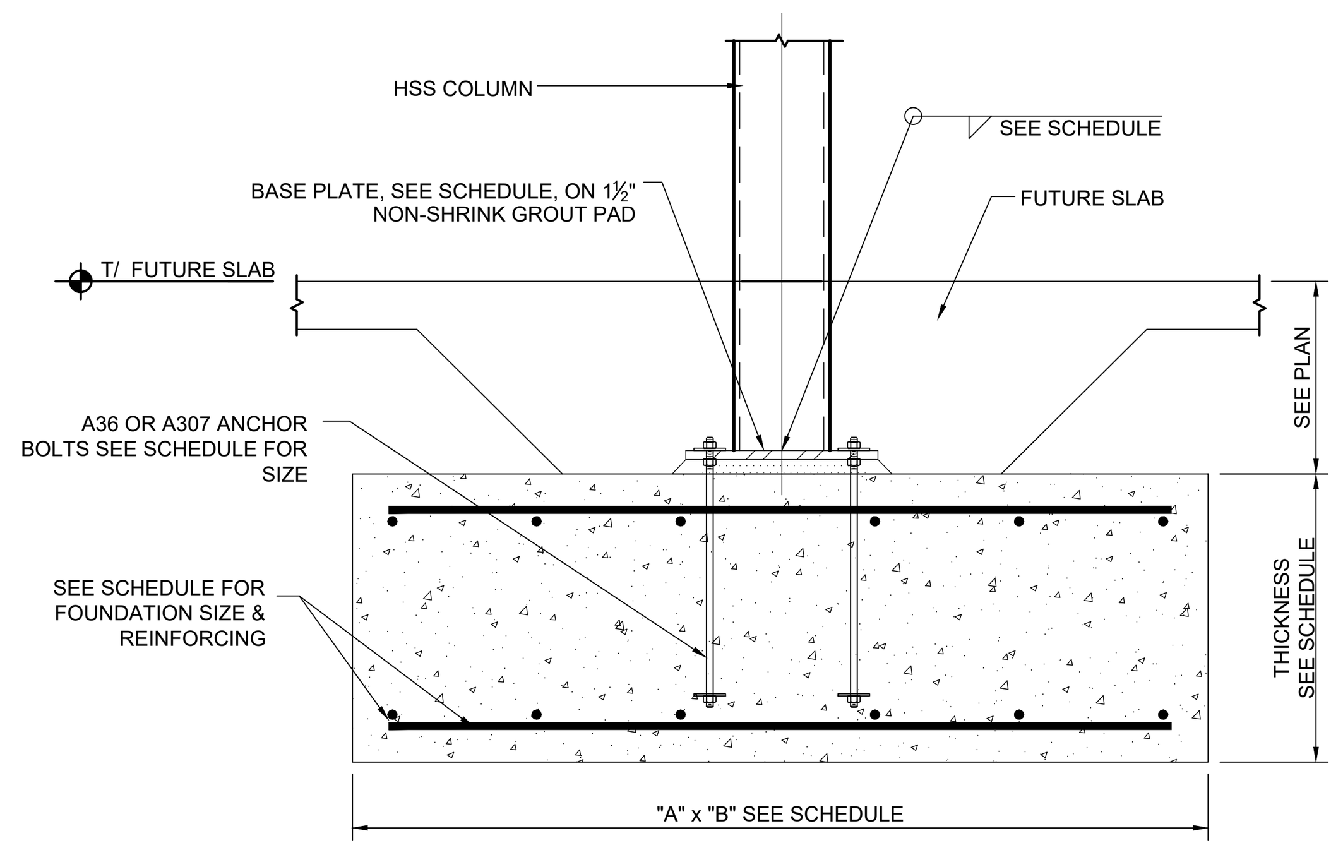


H — ALTERNATE TILT-UP TO (SF) AND CONNECTION DETAIL
OPTION IF 5' INTERIOR EDGE SLAB IS POURED
SCALE 1/2"=1'-0"

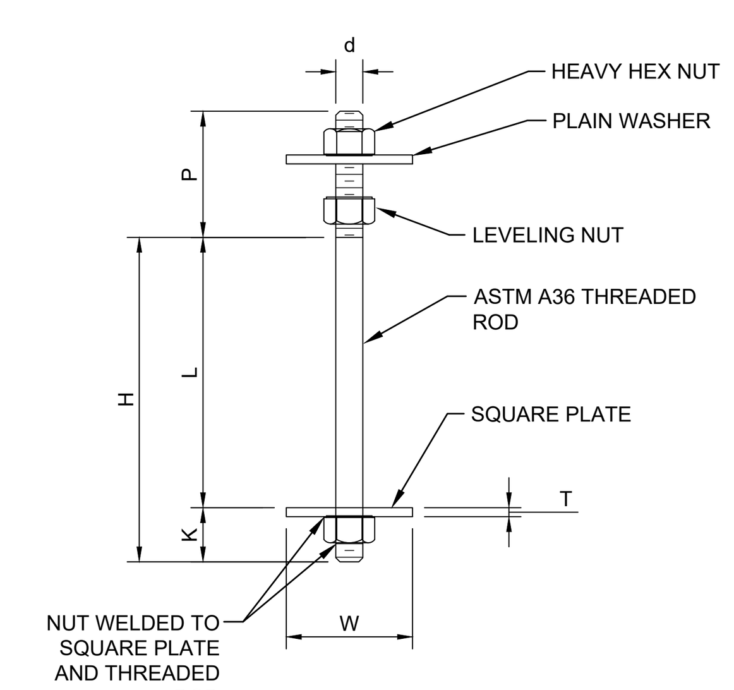
FOUNDATION SCHEDULE				
FOUNDATION DESIGNATION	DIMENSION "A"	DIMENSION "B"	FOUNDATION THICKNESS	REBAR (EA. WAY TOP & BOTTOM)
F3.0	3'-0"	3'-0"	16"	(3) #6
F4.0	4'-0"	4'-0"	20"	(5) #6
F6.0	6'-0"	6'-0"	24"	(7) #6
F7.0	7'-0"	7'-0"	24"	(9) #6

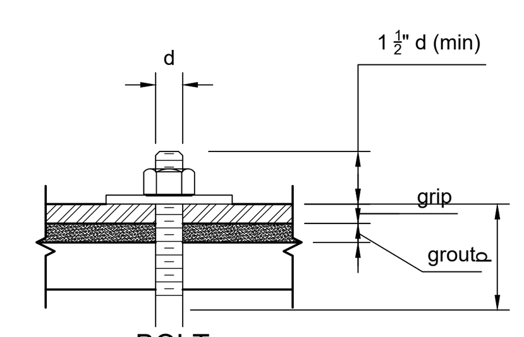


J — SECTION AT FRONT ENTRANCE
SCALE 1/2"=1'-0"



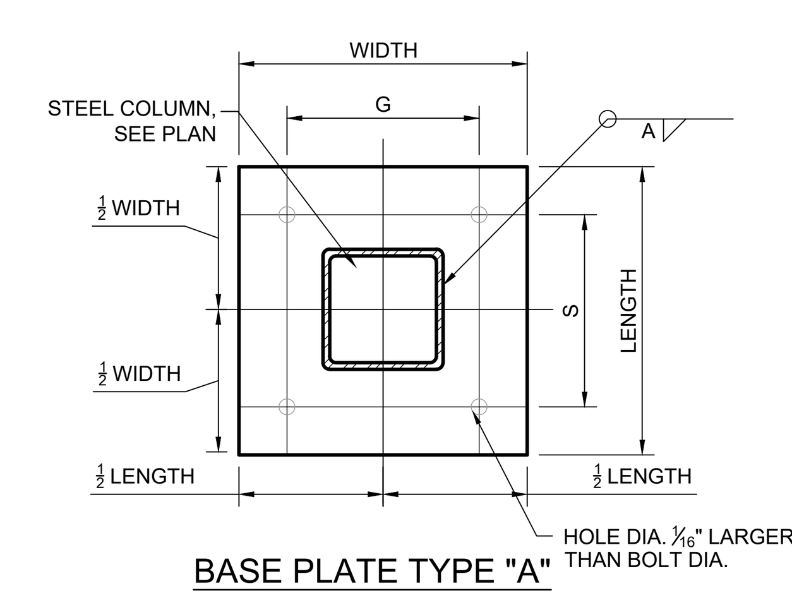
K — TYPICAL STEEL HSS COLUMN FOUNDATION (FX.X)





BOLT PROJECTION
BOLT LENGTH = H + P

LETTERED DIMENSIONS		BOLT DIAMETER 1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4
SQUARE PLATE	W	3	3 1/2	3 1/2	4	4 1/2	5 1/2	6	7
SQUARE PLATE	T	3/8	1/2	1/2	5/8	3/4	3/4	1	1
SQUARE PLATE	HOLE DIA.	5/8	3/4	7/8	1	1 1/8	1 3/8	1 5/8	1 5/8
L		5 1/2	7 1/2	7 1/2	7 1/2	11	11	16	16
H		7	9	9 1/2	9 1/2	13	13 1/2	19	19 1/2
K		1 1/2	1 1/2	2	2	2	2 1/2	3	3 1/2
P (MIN)		3		4			5		
PLAIN WASHER		LIGHT					MEDIUM		



BASE PLATE TYPE "A"

BASE PLATE SCHEDULE

BASE PLATE DESIGNATION	BASE PLATE TYPE	BASE PLATE DIMENSIONS LENGTH	WIDTH	THICKNESS	COLUMN ATTACHMENT WELD "A"	WELD "B"	ANCHOR RODS DIA. "D"	SPA. "S"	SPA. "G"	COLUMN OFFSET "H"	"V"	REMARKS
BP-1	"A"	1'-4"	1'-4"	1"	5/16"	-	3/4"	13"	13"	-	-	-
BP-2	"A"	1'-0"	1'-0"	5/8"	1/4"	-	3/4"	10"	10"	-	-	-
BP-3	"A"	1'-8"	1'-8"	1"	3/8"	-	1"	17"	17"	-	-	-

SCALE 3/4"=1'-0"

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sheet title
FOUNDATION SECTIONS AND DETAILS

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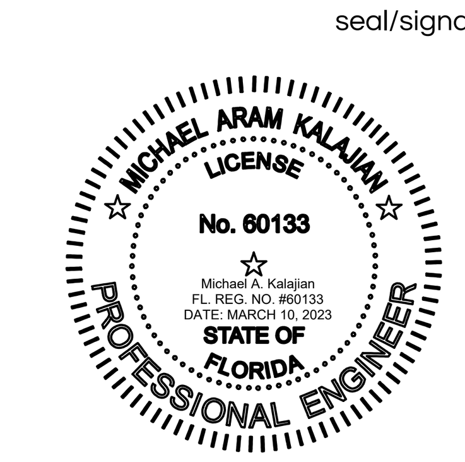

Registered Engineer: Michael A. Kalajian
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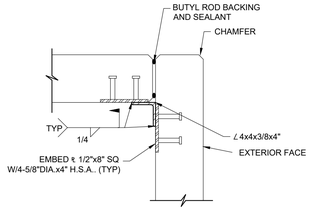
sheet number
S4

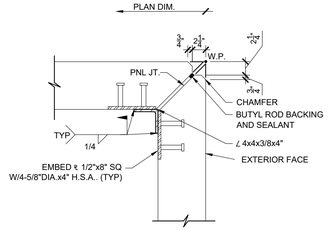
drawn by: MAK checked by: MAK



NOTE: CONNECTION PLATES SHALL BE LOCATED AT 1'-0" ABOVE FINISH FLOOR, 1'-0" BELOW JOIST BEARING AND AT INTERMEDIATE POINTS NOT TO EXCEED 8'-0" O.C.

A — PANEL BUTT JOINT DETAIL

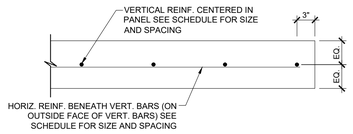
SCALE 1"=1'-0"



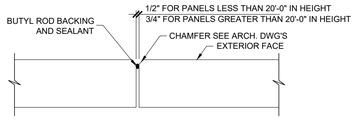
NOTE: CONNECTION PLATES SHALL BE LOCATED AT 1'-0" ABOVE FINISH FLOOR, 1'-0" BELOW JOIST BEARING AND AT INTERMEDIATE POINTS NOT TO EXCEED 8'-0" O.C.

B — PANEL MITER JOINT DETAIL

SCALE 1"=1'-0"



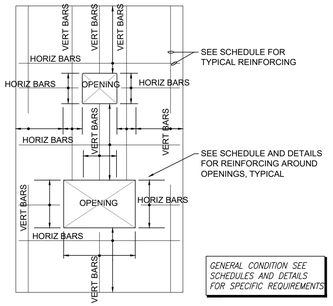
TYPICAL PANEL REINFORCING (CENTERED)



TYPICAL PANEL JOINT

C — TYPICAL PANEL DETAILS

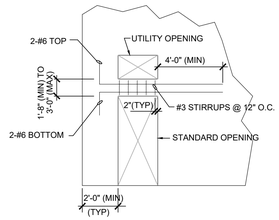
SCALE 1"=1'-0"



GENERAL CONDITION SEE SCHEDULES AND DETAILS FOR SPECIFIC REQUIREMENTS

D — TYPICAL BAR PLACEMENT

SCALE 1"=1'-0"



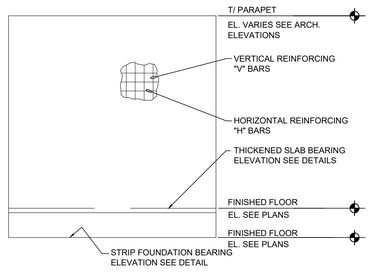
E — TYP. UTILITY OPENING ABOVE STANDARD OPENING

SCALE 1"=1'-0"

TILT-UP PANEL SCHEDULE

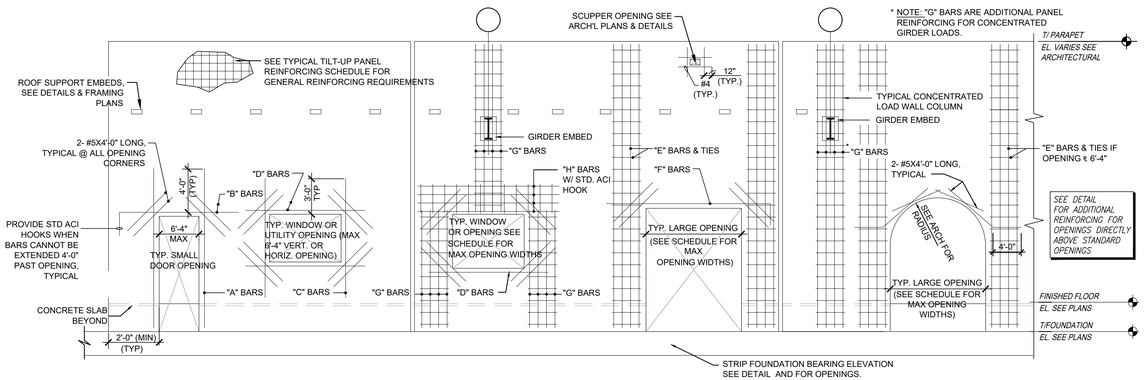
PANEL	THICKNESS	REINFORCING "H" BARS	REINFORCING "V" BARS	NOTES
P1	7 1/4"	#5@16"O.C.	#5@12"O.C.	NOTE 1

NOTES:
1. SEE DETAIL FOR SINGLE MAT REINFORCING PLACEMENT



F — TYPICAL TILT-UP PANEL REINFORCING

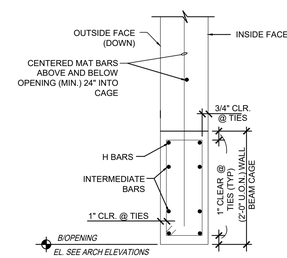
N.T.S.



PANEL	"A" BARS	"B" BARS	"C" BARS	"D" BARS	"E" BARS (TIES)	"F" BARS	"G" BARS (TIES)	"H" BARS (BEAM AND TIES)	OPENING WIDTH (MAX)
P1	2-#5	2-#5	2-#5	2-#5	6-#5 VERT. W/ #3 TIES @ 6" O.C.	2-#5	8-#6 VERT. W/ #3 TIES @ 8" O.C.	2-#6 HORIZ. T&B W/ 4#5 INTERMEDIATE W/#3 TIES @ 8" O.C.	12'-0"

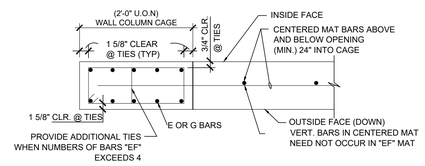
G — TYP. OPENING AND CONCENTRATED LOAD ADDITIONAL REINF. REQUIREMENTS

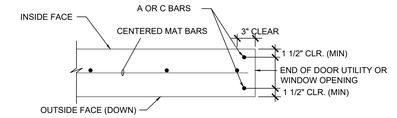
SCALE 1"=1'-0"



H — TYPICAL "H" BAR DETAIL

SCALE 1"=1'-0"





J — WALL COLUMN ADD'L REINF

SCALE 1"=1'-0"

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revisions		
item	description	date

scale
AS NOTED

sheet title

TILT UP PANEL SECTIONS AND DETAILS

seal/signature

Registered Engineer: Michael A. Kalajian
Registered Engineer License: PE 60133

sheet number

S5

drawn by: MAK checked by: MAK

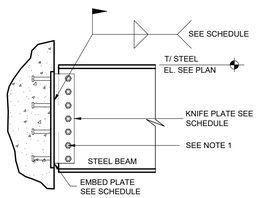
SIMPLE ROOF BEAM CONNECTION SCHEDULE

SUPPORT BEAM	NO. OF 3/4" DIA. A325-N BOLTS	KNIFE PLATE SIZE	WELD	AT TYPICAL CONDITION	
				EMBED PLATES	HEADED STUD ANCHORS (6")
W8, W10	2-3/4" DIA.	1/4"x4x0'-6"	3/16"	3/8x8x0'-8"	4-3/4" DIA.
W12,W14	3-3/4" DIA.	1/4"x4x0'-9"	3/16"	1/2x8x0'-10"	4-3/4" DIA.
W16	4-3/4" DIA.	1/4"x4x1'-0"	3/16"	1/2x8x1'-2"	6-3/4" DIA.
W18	5-3/4" DIA.	1/4"x4x 1'-3"	3/16"	5/8"x8x1'-6"	8-3/4" DIA.
W21	5-3/4" DIA.	1/4"x4x 1'-3"	3/16"	5/8"x8x1'-6"	8-3/4" DIA.
W24	6-3/4" DIA.	1/4"x4x 1'-6"	3/16"	3/4"x8x1'-10"	10-3/4" DIA.
W27	7-3/4" DIA.	1/4"x4x 1'-9"	3/16"	3/4"x8x2'-1"	12-3/4" DIA.

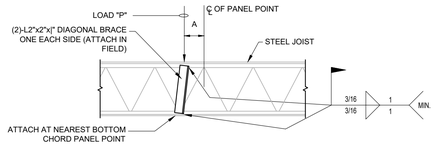
NOTES:

1. SEE SCHEDULE ABOVE FOR NUMBER OF BOLTS (3" GA.)
2. CONNECTIONS ARE VALID FOR BEAMS WITH STANDARD OR SHORT- SLOTTED HOLES, FULLY TIGHTENED OR SNUG TIGHT.
3. WHEN A BEAM FRAMES INTO A CONCRETE COLUMN AT THE END OF A TILT WALL THE EMBED PLATE SHALL BE 7" WIDE.

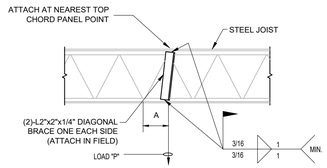
ROOF DECK NOT SHOWN FOR CLARITY



TYPICAL CONDITION



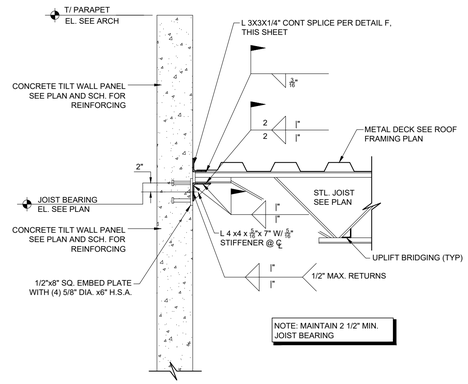
LOAD ON TOP CHORD

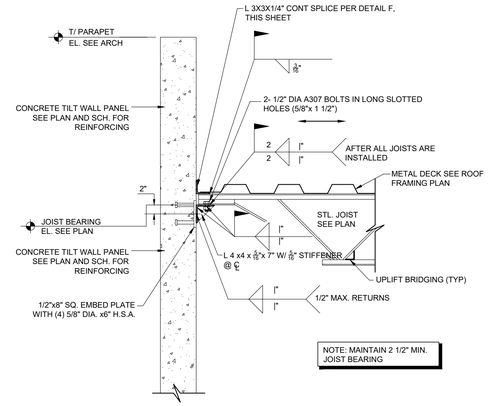


LOAD ON BOTTOM CHORD

NOTES:

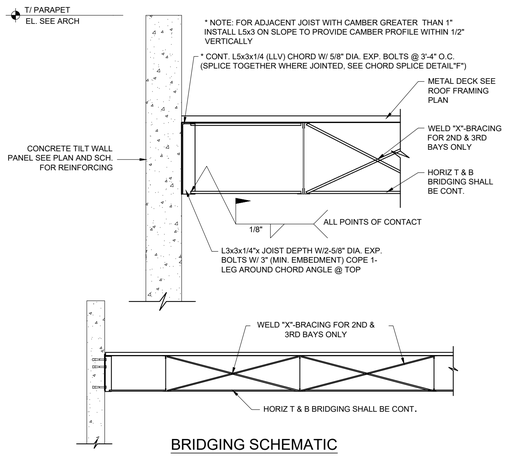
1. DIAGONAL BRACE IS NOT REQUIRED FOR "A" LESS THAN TWO INCHES.
2. PROVIDE DIAGONAL BRACE AT LOCATION OF CONCENTRATED LOADS SUCH AS PARTITIONS, HEAVY PIPES, MECHANICAL UNITS, HEAVY LIGHTS AND ANY OTHER CONCENTRATED LOADS AS DIRECTED BY ENGINEER.
3. P = CONCENTRATED LOAD GREATER THAN 200 LBS.





A — TYPICAL ROOF STEEL BEAM TO PANEL CONNECTION

SCALE 3/4"=1'-0"



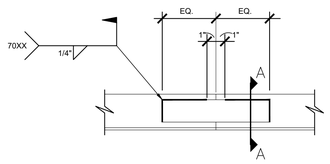
BRIDGING SCHEMATIC

E — TYPICAL BRIDGING DETAIL

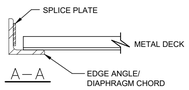
SCALE 3/4"=1'-0"

B — TYPICAL POINT LOAD ON JOIST

SCALE 3/4"=1'-0"

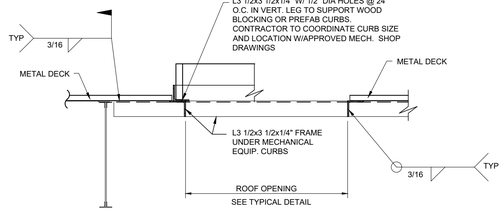


EDGE ANGLE/DIAPHRAGM CHORD SPLICES	
ANGLE	PLATE DIM.
L3x3x1/4"	1/2"x2 1/2"x9"
L4x4x1/4"	1/2"x3 1/2"x1'-0"
L5x3x1/4" LLV	1/2"x4 1/2"x10"
L5x3x1/4" LLH	3/4"x2 1/2"x1'-2"



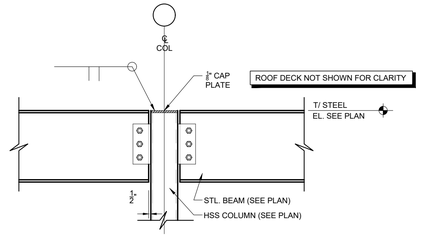
F — DIAPHRAGM CHORD SPLICE

SCALE 3/4"=1'-0"



G — MECHANICAL EQUIP. SUPPORT

SCALE 3/4"=1'-0"



CONTINUOUS BEAMS (NON-MOMENT CONNECTION)

SINGLE PLATE SHEAR BEAM CONNECTION SCHEDULE (SHOP WELDED, FIELD BOLTED)					
BEAM SIZE (SEE PLAN)	NO. OF ¾" DIA. A325-N BOLTS	KNIFE PLATE THICKNESS (36 KSI)	FILLET WELD SIZE (E70XX)	MAX. ALLOWABLE END REACTION (KIPS)	LENGTH (L) (INCH)
W8, W10	2	⅜"	¼"	8.2	6
W12, W14	3	⅜"	¼"	16.3	9
W16, W18	4	⅜"	¼"	26.1	12
W21	5	⅜"	¼"	36.3	15
W24	6	⅜"	¼"	46.3	18
W27	7	⅜"	¼"	56.4	21

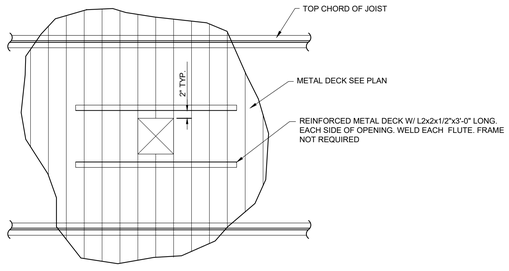
NOTES:
1. SEE SCHEDULE ABOVE FOR NUMBER OF BOLTS (3" GA.)
2. TABULATED VALUES ARE VALID FOR BEAMS WITH STANDARD OR SHORT-SLOTTED HOLES, FULLY TIGHTENED OR SNUG TIGHT.

K — TYPICAL ROOF STEEL BEAM TO STEEL COLUMN CONNECTION

SCALE: 3/4"=1'-0"

C — "K" JOIST SUPPORT DETAIL

SCALE 3/4"=1'-0"

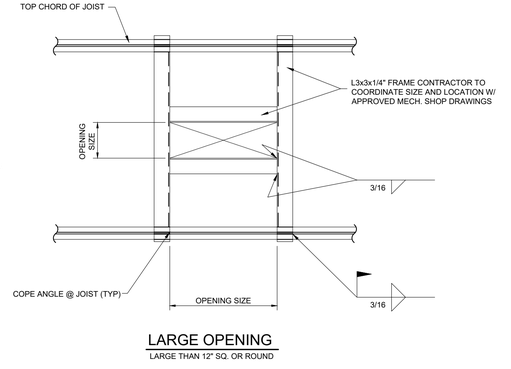


SMALL OPENING

OPENING SMALLER THAN 12" SQ. LARGER THAN 6" SQ.

C — "K" JOIST SUPPORT DETAIL - BOLTED

SCALE 3/4"=1'-0"

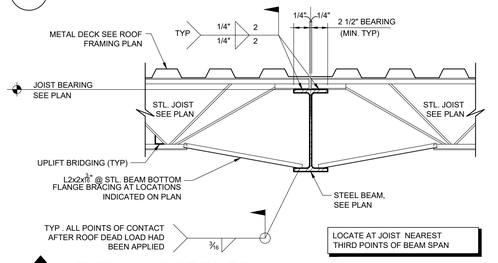


LARGE OPENING

LARGE THAN 12" SQ. OR ROUND

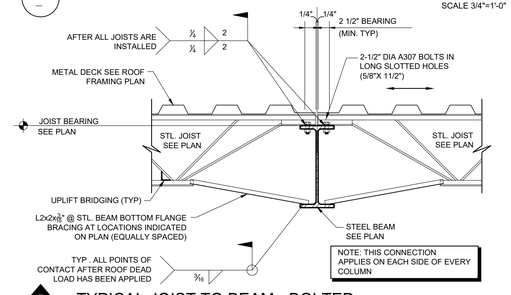
H — TYPICAL ROOF OPENING DETAILS

SCALE 3/4"=1'-0"



L — TYPICAL JOIST TO BEAM

SCALE 3/4"=1'-0"

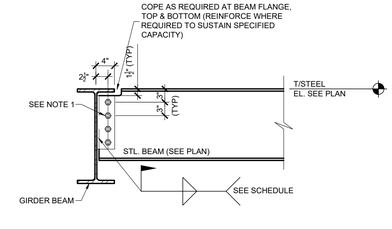


M — TYPICAL JOIST TO BEAM - BOLTED

SCALE 3/4"=1'-0"

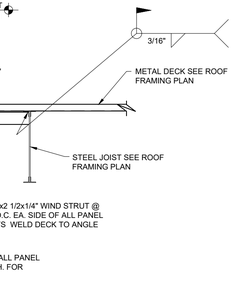
SINGLE PLATE SHEAR ROOF BEAM TO BEAM CONNECTION SCHEDULE					
BEAM SIZE (SEE PLAN)	NO. OF 3/4" DIA. A325-N BOLTS	THRU-PLATE THICKNESS	FILLET WELD SIZE (E70XX)	MAX. ALLOWABLE END REACTION (KIPS)	LENGTH (L) (INCH)
W8, W10	2	¼"	¼"	11.1	6
W12, W14	3	¼"	¼"	22.1	9
W16	4	¼"	¼"	35.4	12
W18, W21	5	⅜"	¼"	49.1	15
W24	6	⅜"	¼"	62.7	18
W27, W30	7	⅜"	¼"	76.4	21

NOTES:
1. SEE SCHEDULE ABOVE FOR NUMBER OF BOLTS (3" GA.)
2. TABULATED VALUES ARE VALID FOR BEAMS WITH STANDARD OR SHORT-SLOTTED HOLES, FULLY TIGHTENED OR SNUG TIGHT.



N — TYPICAL ROOF BEAM TO BEAM CONN.

SCALE: 3/4"=1'-0"



TYPICAL AT ALL PANEL JOINTS

J — ROOF DECK PANEL JOINT

SCALE 3/4"=1'-0"

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PERMIT SET	03/10/2023

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item	description	date

scale
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sheet title

ROOF FRAMING SECTIONS AND DETAILS

seal/signature

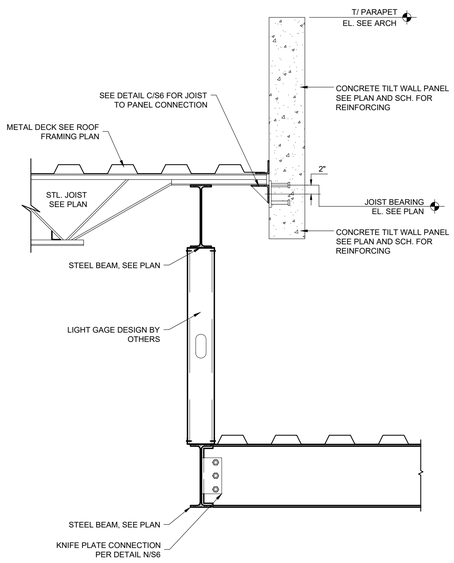
MICHAEL ARAM KALAJIAN LICENSE No. 60133 Michael A. Kalajian P.E. #60133 DATE SIGNED: 10-2023 STATE OF FLORIDA PROFESSIONAL ENGINEER

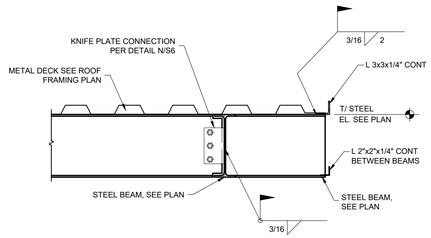
Registered Engineer: Michael A. Kalajian
Registered Engineer License: PE 60133

sheet number

S6

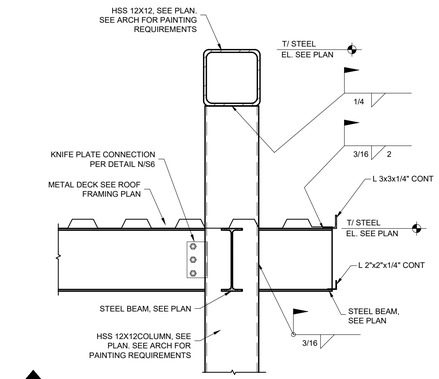
drawn by: MAK checked by: MAK





A — SECTION AT ENTRANCE CANOPY

SCALE 3/4"=1'-0"



B — SECTION AT ENTRANCE CANOPY COLUMN

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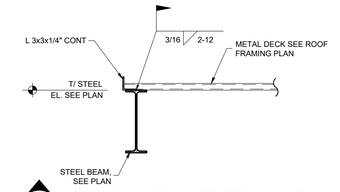
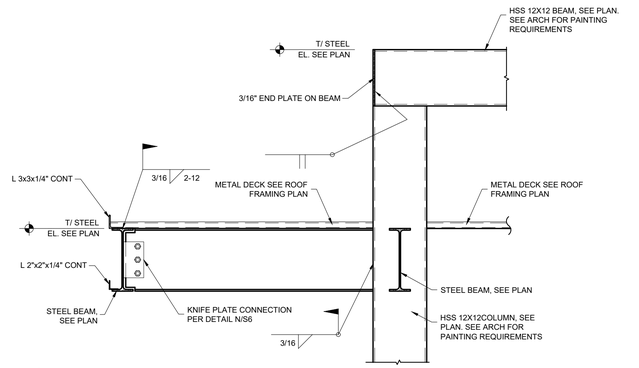


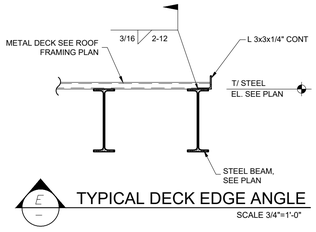
C — TYPICAL DECK EDGE ANGLE

SCALE 3/4"=1'-0"



D — SECTION AT ENTRANCE CANOPY EDGE CANTILEVER

SCALE 3/4"=1'-0"



E — TYPICAL DECK EDGE ANGLE

SCALE 3/4"=1'-0"

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STRUCTURAL SECTIONS AND DETAILS

seal/signature

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LICENSE
No. 60133
Michael A. Kalajian
FL. REG. NO. #60133
DATE: MARCH 10, 2023
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Registered Engineer: Michael A. Kalajian
Registered Engineer License: PE 60133

sheet number

S7

drawn by: MAK checked by: MAK

WHEN PLOTTED AT FULL SIZE THIS SHEET MEASURES 24" x 36"